FM 55-200 S/S 15 April 1980
Copy 2

~~Draper~~

FM 55–200

FIELD MANUAL

AIR TRANSPORT PROCEDURES

TRANSPORT OF HONEST JOHN WARHEAD SECTION

BY US ARMY HELICOPTERS

RETURN TO ARMY LIBRARY
ROOM 1 A 518 PENTAGON

HEADQUARTERS, DEPARTMENT OF THE ARMY
DECEMBER 1975

FIELD MANUAL
No. 55-200

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *15 December 1975*

AIR TRANSPORT PROCEDURES TRANSPORT OF HONEST JOHN WARHEAD SECTION BY US ARMY HELICOPTERS

	Paragraph	Page
Purpose and scope	1	1
Reporting of publication improvements	2	1
General safety and security considerations	3	1
Air transportability and handling data	4	3
Internal transport by CH-47 helicopter	5	3
Internal transport by CH-54 helicopter universal military pod	6	16
External transport by UH-1-series, CH-47, and CH-54 helicopters	7	29
APPENDIX A. REFERENCES	--	33
B. CONVERSION TABLES	--	35

1. Purpose and Scope

a. This manual presents Department of the Army approved procedures for internal and external transport of the Honest John warhead section by US Army helicopters. This manual pertains to the UH-1-series, CH-47, and CH-54 helicopters. Materials and qualified manpower needed to prepare, load, tie down, and unload or rig and derig the several load configurations are prescribed herein. Where appropriate, metric equivalents are given in parentheses following the dimension or other measurement. Conversion tables are contained in appendix B. References are shown in appendix A.

b. The internal transport procedures in this manual apply when the warhead section is transported by the CH-47 helicopter or by universal military pod attached to the CH-54 helicopter. The described internal loads of two warhead sections for the CH-47 and the CH-54 pod are maximum loads. The external transport procedures apply when one warhead section is transported by UH-1-series helicopter having an allowable cargo load capacity equal to or greater than the weight of the load, or when one warhead section is transported by CH-47 or CH-54 helicopter. Additional internal cargo, including different types of nuclear weapons and/or personnel within allowable load limits and restrictions prescribed by AR 50-5 and pertinent safety regulations (app A), may be transported.

c. Times given to prepare, load, tie down, and unload or rig and derig the loads described in this manual may vary, dependent upon existing conditions.

2. Reporting of Publication Improvements

The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. **Reports should be** submitted on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and **forwarded to Director, Military Traffic Management Command Transportation Engineering Agency, ATTN: MTT-TRP, P.O. Box 6276, Newport News, VA 23606.**

3. General Safety and Security Considerations

WARNING

The Honest John warhead section is not to be jettisoned under any circumstances.

a. Additionally, the following warnings will be observed by personnel performing operations, procedures, and practices that are included or implied in this manual. Disregard of these warnings could result in personal injury or loss of life.

(1) Prior to each nuclear cargo mission, the helicopter commander will familiarize himself with the provisions of AR 50-5 and insure compliance therewith. In addition, he will become familiar with the security, safety, and technical peculiarities of the cargo that may affect air transport. Flight plans should avoid populated

*This manual supersedes TM 55-1100-200-12-6, 12 April 1966; TM 55-1100-200-12-7, 8 April 1966; TM 55-1100-200-12-10, 15 October 1970; TM 55-1100-200-12-11, 19 June 1971; and TM 55-1100-200-20-2, 27 March 1967, including all changes.

areas to the maximum extent possible. When transporting the warhead section in the universal military pod by CH–54 helicopter, the pod must be secured to the helicopter to preclude jettisoning the pod deliberately or inadvertently. Procedures for securing the pod to preclude jettisoning are prescribed in paragraphs 13–5 and 13–6 of TM 55–1520–217–10–1 or in paragraphs 13–3 and 13–4 of TM 55–1520–217–10–2.

(2) To determine compatibility of any other nuclear weapons or other cargo as authorized in chapter 4, AR 50–5, for transport with the warhead section, ordnance support channels must be consulted. Information on compatibility is contained in TM 39–45–51C and TM 38–250, which are distributed to major headquarters and direct support and general support levels. Restrictions listed in TM 39–20–7 will not be exceeded when additional types of nuclear weapons are transported along with the warhead section.

(3) Emergency destruction procedures for the warhead section and associated components will be accomplished in accordance with TM 39–50–8. Normally, emergency destruct materials will not be carried on the same aircraft as nuclear weapons. In the isolated case where operational necessity limits the availability of alternate aircraft, the theater commander may authorize emergency destruct materials (including blasting caps) to be transported in the load-carrying aircraft. Such materials will be properly packaged, isolated from weapons as far as possible, and tied down so as to prevent movement. Only the number of destruct charges and blasting caps necessary to destroy the cargo will be carried aboard. Blasting caps in their container will be stored separately and surrounded by a sandbag barrier.

(4) The warhead section will be loaded and tied down in accordance with the procedures in this manual except that it may be repositioned for helicopter operational reasons, or when loading additional nuclear weapons or other cargo and/or personnel. If a location other than that shown in the respective tiedown diagram is used, the helicopter commander must insure that—

(*a*) The number and load capacity of the tiedown devices are as prescribed in this manual.

(*b*) The tiedown devices restraining the warhead section are secured to tiedown fittings in the same location relative to the item as those fittings used in the pertinent tiedown diagram.

(*c*) The warhead section faces as shown in the pertinent tiedown diagram.

b. The following operational precautions will be observed during loading, rigging, tiedown, transport, and unloading of the warhead section.

(1) Web strap tiedown assemblies and cargo slings, as used to secure or sling-transport the items described in this manual, are limited to a maximum time of usage (useful life) of 36 months. The time of usage will commence at the time the tiedowns and slings are unpackaged for use by the using organization. At that time they will be marked using stencil ink TT–I–1795 (any color) with the current date (month and year) in at least ½-inch-high letters.

(2) Prior to each usage, tiedowns and slings will be inspected for tears, punctures, or cuts. Additionally, metal items will be inspected for inproper operation, corrosion, cracks, or distortion. If any of these conditions are present, or if the time of usage exceeds 36 months, the tiedowns or slings must be replaced. No testing of tiedowns or slings will be conducted. Additional storage, inspection, and maintenance criteria for tiedowns and slings are prescribed by 55–450-series technical manuals.

(3) Movement of the container must be controlled to prevent damage to the item or the helicopter. During winching of the container into the helicopter, a safety restraining device such as type XXVI web strapping, or equivalent, should be used. One end of the strapping is fastened to the container and the free end is passed through a strap fastener (NSN 1670–00–360–0340), which is attached to a tiedown fitting in the forward part of the helicopter. The free end of the strapping is then *manned outside and to the rear of the helicopter.* As the container is winched into the helicopter, slack it taken out of the strapping so that in the event of winch or cable failure the container will be restrained in place. The safety restraining devices identified in paragraph 4–67, TM 55–450–15, may be used.

(4) When attaching tiedown devices to cargo and to tiedown fittings, approximately equal tension must be maintained throughout tiedown arrangements. Tiedowns must be checked during flight and tightened as necessary.

(5) Security and safety measures relative to guards, fire, or emergency destruction procedures, as established by pertinent publications (app A), will be observed during all phases of air transport. All operations described herein will be in strict compliance with AR 50–104 and TM 9–1100–200–20.

(6) The danger areas around helicopters must be cleared of personnel, other aircraft,

vehicles, and loose objects including trash, before the engines are started.

(7) The high noise level of helicopter engines can cause permanent damage to the human ear. All personnel working in the vicinity will wear hearing protectors and avoid entering engine noise danger area. In addition, external cargo hookup personnel will wear goggles and protective headgear (hard hat, steel helmet, or flight helmet).

(8) During winching operations, the area behind the container must be cleared of personnel, and only necessary personnel will be in the cargo compartment.

(9) To prevent movement of parking shoring during loading operations, secure a tiedown chain across cargo compartment forward of cargo tiedown location and butt shoring against chain.

(10) Blocks may be used as spacers between conveyor sections to maintain alignment of the conveyors during loading and unloading operations.

(11) CGU–1/B tiedown devices may be placed around forward end of container or container base and aft end of conveyors to prevent container or base from being pulled off conveyors during loading.

4. Air Transportability and Handling Data

a. Air transport load configurations of the Honest John warhead section are as follows:

(1) Configuration I, the warhead section in the M480 (XM136E2) or XM480E1 (XM136E1) shipping and storage container.

(2) Configuration II, the warhead section on the M480 (XM136E2) or XM480E1 (XM136E1) shipping and storage container base assembly with or without casters.

(3) Configuration III, the warhead section on the caster-mounted dolly.

b. The dimensions and approximate weight of Configurations I through III are shown below:

NOTE

Casters installed on base assembly of M480 and M480E1 containers (with or without cover installed) will be removed prior to shipment or the container blocked to assure that weight is off casters during shipment. This manual provides for shipment of the containers and the container base assemblies without casters.

c. The caster-mounted dolly is a conversion of the shipping and storage container base frame and suspension frame assembly. Conversion procedures are prescribed in paragraphs 5–1 and 5–2, TM 9–1100–200–20, and may be performed with the warhead section installed.

d. Items comprising the several load configurations must be inspected for damage other than minor scratches and abrasions. If any item is damaged to such an extent that its contents or functions are believed to be affected, notify the support unit and submit a report in accordance with chapter 5, AR 50–5, if appropriate.

e. Bolts and latches on container, and warhead section tiedown strap must be tightened, if necessary.

f. If wheeled or roller conveyor sections are not available, the containers and container bases may be winched on their skids over the shoring.

g. Conveyor sections and all load configurations must rest on shoring when transported in the CH–47 and CH–54 (pod) helicopters.

5. Internal Transport by CH–47 Helicopter

NOTE

The following procedures (*a*, *b*, *c*, and *d*) describe the loading and tiedown of the Honest John warhead section in the M480 shipping and storage container. Loading and tiedown of the XM480E1 container are identical except that the tiedown and lifting fixtures on the M480 container are bars; whereas, in most cases, the tiedown and lifting fixtures on the XM480E1 container are rings.

Configuration	*Length*	*Width*	*Height*	*Weight**
I (M480)	134.5 in (3.42 m)	40.0 in (1.02 m)	52.0 in (1.32 m)	2,663 lb (1,208 kg)
I (XM480E1)	134.5 in (3.42 m)	44.0 in (1.12 m)	52.0 in (1.32 m)	2,775 lb (1,259 kg)
II (M480)	134.5 in (3.42 m)	40.0 in (1.02 m)	44.5 in** (1.13 m)	2,223 lb (1,008 kg)
II (XM480E1)	134.5 in (3.42 m)	44.0 in (1.12 m)	44.5 in** (1.13 m)	2,315 lb (1,050 kg)
III (dolly)	122.0 in (3.10 m)	37.0 in (0.94 m)	43.0 in (1.09 m)	1,670 lb (758 kg)

* Approximate weight of empty containers: 1,425 lb (646 kg) for the M480 and 1,517 (688 kg) for the XM480E1.

** Height without casters mounted on bottom. Height with casters mounted on bottom is 47.5 in. (1.21 m).

a. Transport of one M480 container (configuration I), using lumber shoring.

(1) *Materials.*

(*a*) Parking shoring: two pieces, 2- by 12-inch by 12-foot.

(*b*) Rolling shoring: two pieces, 2- by 12-inch by 12-foot; four pieces, 2- by 12-inch by 8-foot.

(*c*) Bridge shoring: plywood, one sheet, 4- by 8-foot by ½-inch (may be used but is not required).

(*d*) Blocking shoring: approximately 22 pieces, 2- by 12- by 12-inch.

(*e*) Wheeled or roller conveyor: two sections, 10-foot (NSN 3910–00–903–1303), or equivalent.

(*f*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

(2) *Loading.*

(*a*) Position rolling shoring and two helicopter auxiliary loading ramps to align with skids of container. Use parking shoring as rolling shoring. Four men can prepare, load, and tie down the container in approximately 30 minutes.

(*b*) Position shoring and conveyors, rollers down, as shown in figure 1. Use 8-foot pieces on ramp and as first extension into the cargo compartment.

(*c*) Position container (front end towards helicopter) on conveyors using forklift or crane.

(*d*) Attach helicopter winch cable hook to towing eye on front end of container base, and safety tie the hook to prevent accidental release. Safety tying the hook is not required when the hook is equipped with a serviceable safety latch.

(*e*) Place a wood block at ramp hinge, beneath towing cable, to protect helicopter floor.

(*f*) Position guides to adjust shoring, observe clearances, and signal winch operator as necessary.

(*g*) Winch container onto helicopter ramp (fig 2) and reposition ground-level shoring into the helicopter at container tiedown location. Blocking shoring may be used to fill in gap between the rolling and parking shoring.

(*h*) Slowly winch container to its tiedown location. As the container center of balance approaches the crest of the ramp hinge, the ramp may be raised to floor level position for ease of loading.

(*i*) Apply fore and aft restraints to container, and release tension on the winch cable. The winch cable may remain attached to the container during flight for use in unloading.

(*j*) Tie down the container (on the conveyors) in accordance with figure 3 and table 1.

(*k*) Reposition materials required during unloading, and tie down as directed by the helicopter commander.

(3) *Unloading.* Unloading procedures are essentially the reverse of loading procedures. Use the helicopter winch as a safety restraint when the container is manhandled from the helicopter. Care must be exercised when container center of balance passes over ramp hinge. The container may also be manhandled onto the ramp when at floor level position. The ramp with container is then lowered to ground level. Four men can unload the container from the helicopter in approximately 15 minutes.

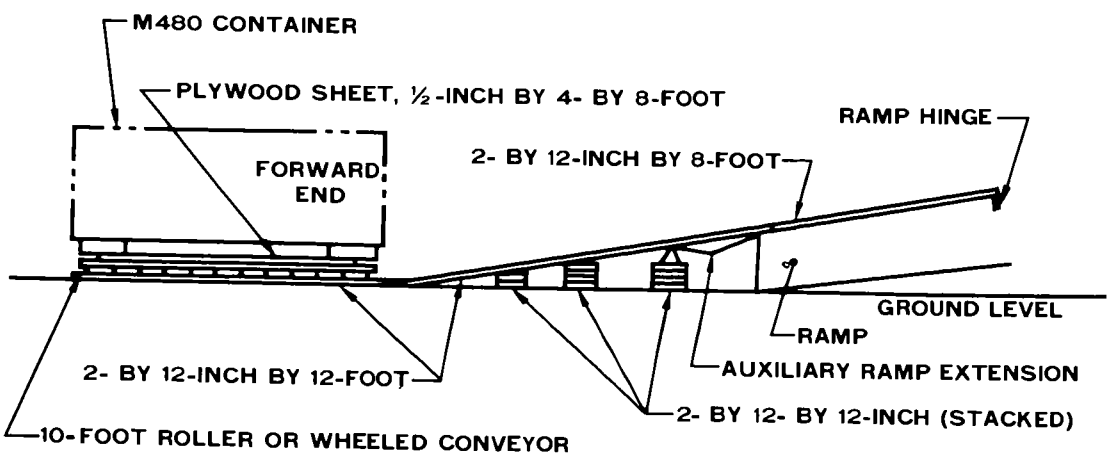


Figure 1. Side view schematic of rolling and blocking shoring positioned for loading the M480 container, with Honest John warhead section, into CH–47 helicopter. Plywood may be used between container and conveyors but is not required.

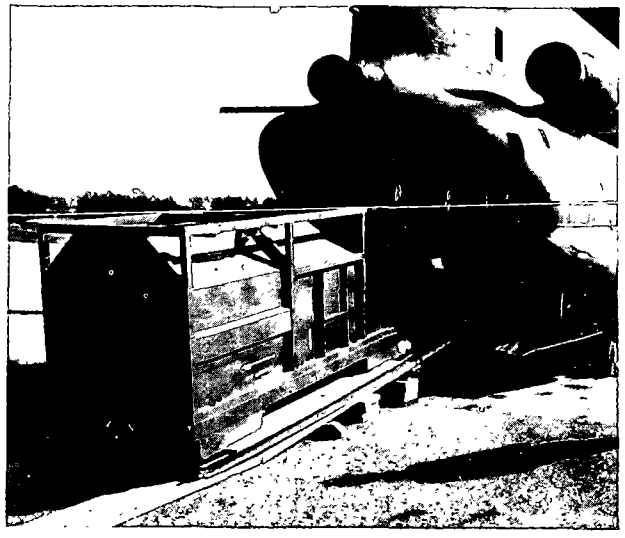


Figure 2. M480 container, with Honest John warhead section being loaded into CH–47 helicopter. Note position of rolling and blocking shoring. Plywood may be used between container and conveyors but is not required.

b. Transport of one M480 container (configuration I), using plywood shoring.

(1) *Materials.*

(*a*) Parking shoring: two sheets, 4– by 8-foot by ½-inch.

(*b*) Bridge shoring: one sheet, 4– by 8-foot by ½-inch (may be used but is not required).

(*c*) Rolling shoring: three sheets, 4– by 8-foot by ½-inch.

(*d*) Blocking shoring: lumber, four pieces, approximately 2– by 12– by 12-inch.

(*e*) Wheeled or roller conveyor: two sections, 100-foot (NSN 3910–00–903–1303), or equivalent.

(*f*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

(2) *Loading.*

(*a*) Position two helicopter auxiliary loading ramps to align with skids of container. Four men can prepare, load, and tie down the container in approximately 30 minutes.

(*b*) Place blocking shoring under loading ramps to decrease angle of entry.

(*c*) Position rolling shoring: one sheet on ramp, one sheet extending from ramp hinge into cargo compartment, one sheet extending from end of ramp to ground, and two sheets (end-to-end) on ground. Use parking shoring as rolling shoring.

(*d*) Position conveyors (wheels down) and bridge shoring, as shown in figure 1.

(*e*) Observe guidance in *a*(2) (*c*) through (*k*) above.

(3) Unloading. Observe guidance in *a* (3) above.

c. Transport of two M480 containers (configurationI), using lumber shoring.

(1) *Materials.*

(*a*) Parking shoring: four pieces, 2- by 12-inch by 12-foot.

(*b*) Rolling shoring: four pieces, 2- by 12-inch by 12-foot; two pieces, 2-by 12-inch by 8-foot.

(*c*) Bridge shoring: plywood, two sheets, 4- by 8-foot by ½-inch (may be used but is not required).

(*d*) Blocking shoring: approximately 22 pieces, 2- by 12- by 12-inch.

(*e*) Wheeled or roller conveyor: four sections, 10-foot (NSN 3910–00–903–1303), or equivalent.

(*f*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

(2) *Loading.*

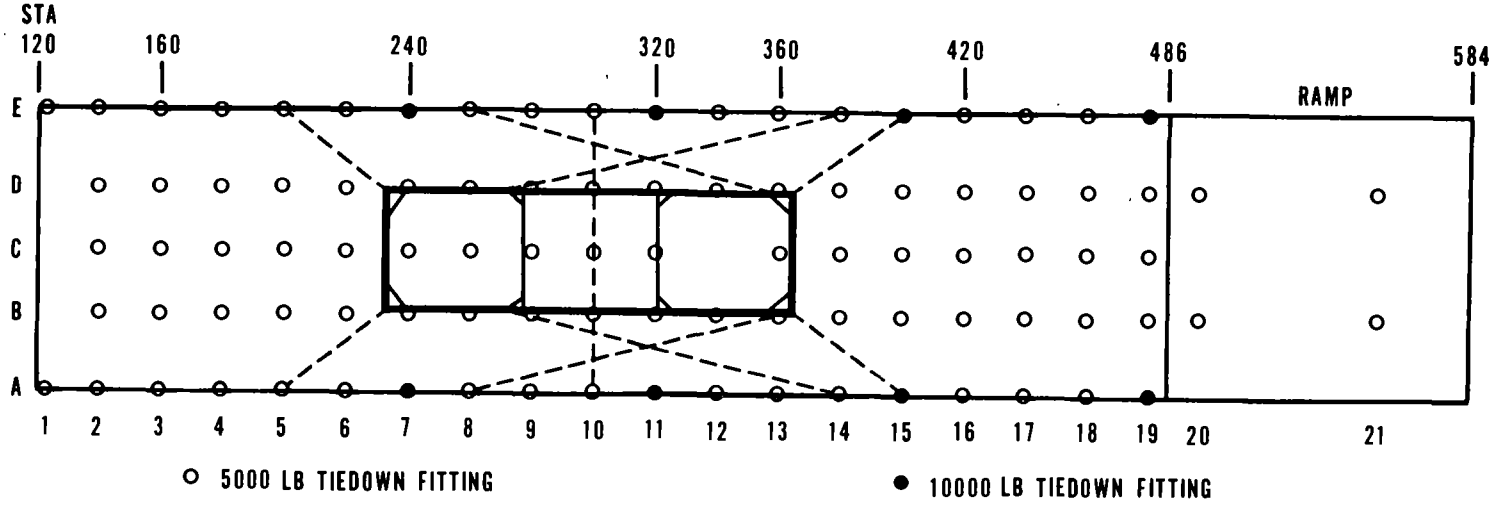
(*a*) Position rolling shoring and two helicopter auxiliary loading ramps to align with skids of container. Use parking shoring as rolling shoring. Four men can prepare, load, and tie down each container in approximately 30 minutes.

(*b*) Position shoring and conveyors,

Table 1. Tiedown Data for One M480 Container, With Honest John Warhead Section, in CH–47 Helicopter

Tiedown fitting		Tiedown device*		
Designation	Capacity in 1,000 lb	Type	Capacity in 1,000 lb	Attach to item
A5	5	CGU–1/B	5	Around upper left front vertical frame
E5	5	CGU–1/B	5	Around upper right front vertical frame
A8	5	CGU–1/B	5	Left rear lift fixture
E8	5	CGU–1/B	5	Right rear lift fixture
A10/E10	5	CGU–1/B	5	Over the container
A14	5	CGU–1/B	5	Left front lift fixture
E14	5	CGU–1/B	5	Right front lift fixture
A15	10	CGU–1/B	5	Around upper left rear vertical frame
E15	10	CGU–1/B	5	Around upper right rear vertical frame

*MC–1 tiedown device may be used.



NOTE. UTILITY HATCH DOOR IS LOCATED IN THE CENTER OF THE FLOOR BETWEEN STATIONS 320 AND 360

DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
		REFERENCE POINT	STATION		
M480 CONTAINER WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	230	309	2663

Figure 3. Tiedown diagram for one M480 container, with Honest John warhead section, in CH-47 helicopter.

wheels down, as shown in figure 1. Use 8-foot pieces on ramp.

(*c*) Position container (front end towards helicopter) on conveyors using forklift or crane.

(*d*) Attach helicopter winch cable hook to towing eye on front end of container base, and safety-tie the hook to prevent accidental release. Safety tying the hook is not required when the hook is equipped with a serviceable safety latch.

(*e*) Place a wood block at ramp hinge, beneath towing cable, to protect helicopter floor.

(*f*) Position guides to adjust shoring, observe clearances, and signal winch operator as necessary.

(*g*) Winch first container onto helicopter ramp and reposition ground-level shoring into the helicopter at container tiedown location. Blocking shoring may be used to fill in the gap between the rolling and parking shoring.

(*h*) Slowly winch container to its tiedown location. As the container center of balance approaches the crest of the ramp, the ramp may be raised to floor level position for ease of loading.

(*i*) Apply fore and aft restraints to container, and remove winch cable for use on second container. Pass the winch cable beneath first container, and attach cable hook to towing eye on front end of second container.

(*j*) Temporarily relocate 12-foot parking shoring from helicopter to ground level, and load second container as prescribed for first container. Position 12-foot shoring at container tiedown location. The winch cable may remain attached to the container during flight for use in unloading.

(*k*) Tie down the containers (on the conveyors) in accordance with figure 4 and table 2.

NOTE

When tiedown fittings and area forward of helicopter station 160 are not available for cargo because of gun mounts or seating for personnel, move item A aft so that forward edge of container is at station 165. Also relocate tiedowns from fittings A1 and E1 to fittings A3 and E3 and from fittings A4 and E4 to fittings A5 and E5 respectively.

(*l*) Reposition materials required during unloading, and tie down as directed by the helicopter commander.

(3) *Unloading.* Unloading procedures are essentially the reverse of loading procedures. Use the winch as a safety restraint when containers are manhandled from the helicopter. Care must be exercised when container center of balance passes over ramp hinge. Each container may also be manhandled onto the ramp when at floor level position. The ramp with container is then lowered to ground level. Four men can unload both containers from the helicopter in approximately 30 minutes.

d. Transport of two M480 containers (configuration I), using plywood shoring.

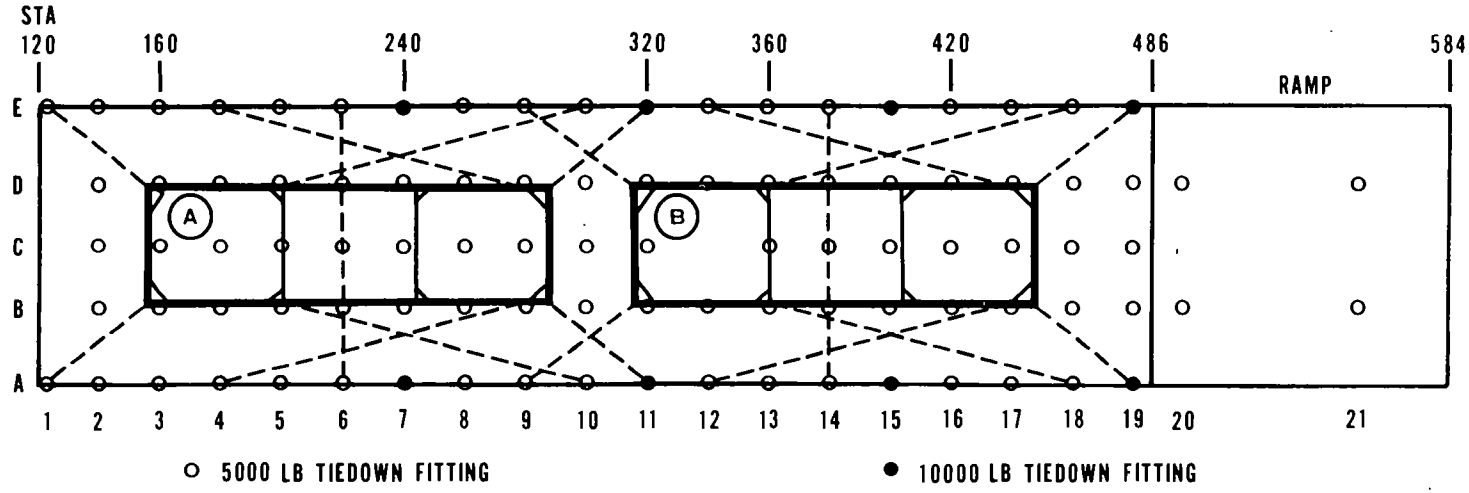
(1) *Materials.*

(*a*) Parking shoring: three sheets, 4- by 8-foot by ½-inch.

Table 2. Tiedown Data for Two M480 Containers, With Honest John Warhead Sections, in CH–47 Helicopter

Item	Tiedown fitting		Tiedown device*		Attsch to item
	Designation	Capacity in 1,000 lb	Type	Capacity in 1,000 lb	
A	A1	5	CGU–1/B	5	Around upper left front vertical frame.
	E1	5	CGU–1/B	5	Around upper right front vertical frame.
	A4	5	CGU–1/B	5	Left rear lift fixture.
	E4	5	CGU–1/B	5	Right rear lift fixture.
	A6/E6	5	CGU–1/B	5	Over the container.
	A10	5	CGU–1/B	5	Left front lift fixture.
	E10	5	CGU–1/B	5	Right front lift fixture
	A11	10	CGU–1/B	5	Around upper left rear vertical frame
	E11	10	CGU–1/B	5	Around upper right rear vertical frame
B	A9	5	CGU–1/B	5	Around upper left front vertical frame
	E9	5	CGU–1/B	5	Around upper right front vertical frame
	A12	5	CGU–1/B	5	Left rear lift fixture
	E12	5	CGU–1/B	5	Right rear lift fixture
	A14/E14	5	CGU–1/B	5	Over the container
	A18	5	CGU–1/B	5	Left front lift fixture
	E18	5	CGU–1/B	5	Right front lift fixture
	A19	10	CGU–1/B	5	Around upper left rear vertical frame
	E19	10	CGU–1/B	5	Around upper right rear vertical frame

*MC–1 tiedown device may be substituted.



NOTE UTILITY HATCH DOOR IS LOCATED IN THE CENTER OF THE FLOOR BETWEEN STATIONS 320 AND 360

ITEM	DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
			REFERENCE POINT	STATION		
(A)	M480 CONTAINER WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	155	234	2663
(B)	M480 CONTAINER WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	315	394	2663

Figure 4. Tiedown diagram for two M480 containers, with Honest John warhead sections, in CH–47 helicopter.

(*b*) Bridge shoring: two sheets, 4- by 8-foot by ½-inch (may be used but is not required).

(*c*) Rolling shoring: three sheets, 4- by 8-foot by ½-inch.

(*d*) Blocking shoring: lumber, four pieces, approximately 2- by 12- by 12-inch.

(*e*) Wheeled or roller conveyor: four sections, 10-foot (NSN 3910–00–903–1303), or equivalent.

(*f*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

(2) Loading.

(*a*) Position two helicopter auxiliary loading ramps to align with skids of container. Four men can prepare, load, and tie down each container in approximately 30 minutes.

(*b*) Place blocking shoring under loading ramps to decrease angle of entry.

(*c*) Position rolling shoring: one sheet on ramp, one sheet extending from ramp hinge into cargo compartment, one sheet extending from end of ramp to ground, and two sheets (end-to-end) on ground. Use parking shoring as rolling shoring.

(*d*) Position conveyors (wheels down) and bridge shoring, as shown in figure 1.

(*e*) Observe guidance in *c*(2)(*c*) through (*l*) above.

(3) *Unloading.* Observe guidance in *c*(3) above.

e. Transport of one or two container bases, M480 (configuration II), using lumber or plywood shoring. The warhead section on the M480 or XM480E1 container base differs from the warhead section in the M480 or XM480E1 shipping and storage container only in that the container cover is removed from the container base. The materials and loading and unloading procedures are identical to those prescribed in *a* and *b* or *c* and *d* above. The container base is tied down in accordance with figure 5 and table 3 or figure 6 and table 4.

f. Transport of one caster-mounted dolly (configuration III), using lumber shoring.

(1) *Materials.*

(*a*) Parking shoring: two pieces, 2- by 12-inch by 12-foot.

(*b*) Rolling shoring: two pieces, 2- by 12-inch by 12-foot; four pieces, 2- by 12-inch by 8-foot.

(*c*) Blocking shoring: approximately 22 pieces, 2- by 12- by 12-inch.

(*d*) Chains: two 10,000-pound capacity (type used with C–2 or MB–1 tiedown devices), or equivalent.

Table 3. Tiedown Data for One M480 Container Base, With Honest John Warhead Section, in CH–47 Helicopter

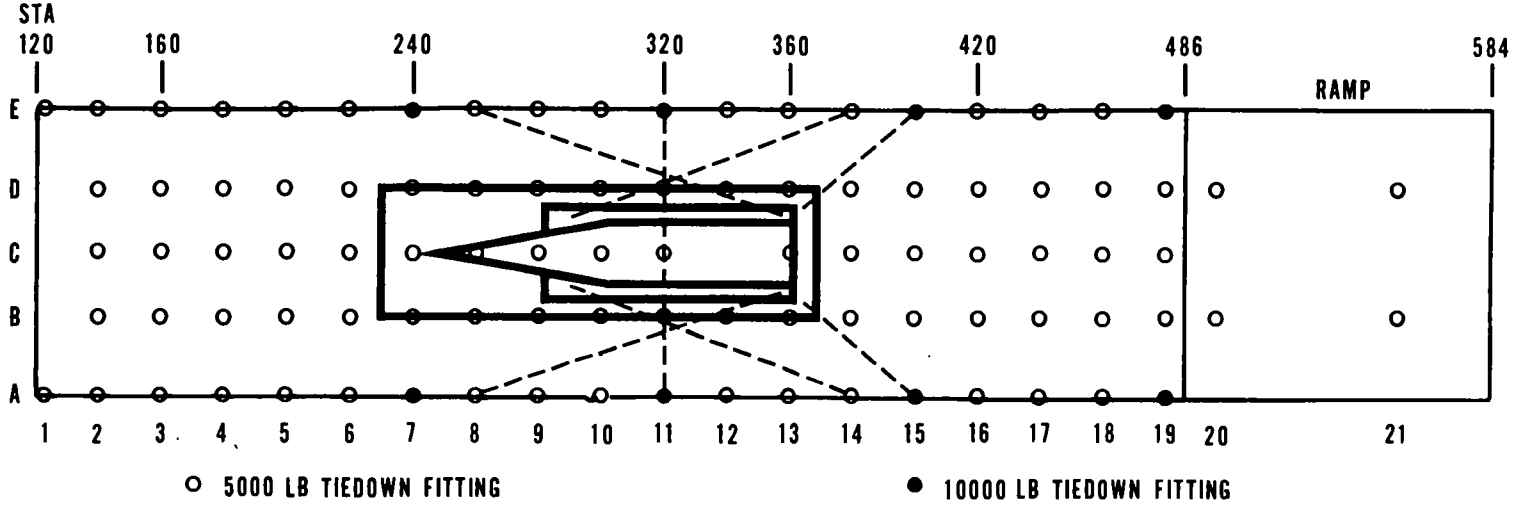
Tiedown fitting		Tiedown device*		
Designation	Capacity in 1,000 lb	Type	Capacity in 1,000 lb	Attach to item
A8	5	CGU–1/B	5	Left rear frame lift fixture
E8	5	CGU–1/B	5	Right rear frame lift fixture
A11/E11	10	CGU–1/B	5	Over dolly frame under warhead
A14	5	CGU–1/B	5	Left front frame lift fixture
E14	5	CGU–1/B	5	Right front frame lift fixture
A15	10	CGU–1/B	5	Left rear base lift fixture
E15	10	CGU–1/B	5	Right rear base lift fixture

*MC–1 tiedown device may be used.

Table 4. Tiedown Data for Two M480 Container Bases, With Honest John Warhead Sections, in CH–47 Helicopter

Item	Tiedown fitting		Tiedown device*		
	Designation	Capacity in 1,000 lb	Type	Capacity in 1,000 lb	Attach to item
A	A4	5	CGU–1/B	5	Left rear frame lift fixture
	E4	5	CGU–1/B	5	Right rear frame lift fixture
	A7/E7	10	CGU–1/B	5	Over dolly frame under warhead
	A10	5	CGU–1/B	5	Left front frame lift fixture
	E10	5	CGU–1/B	5	Right front frame lift fixture
	A11	10	CGC–1/B	5	Left rear base lift fixture
	E11	10	CGU–1/B	5	Right rear base lift fixture
B	A12	5	CGU–1/B	5	Left rear frame lift fixture
	E12	5	CGU–1/B	5	Right rear frame lift fixture
	A15/E15	10	CGU–1/B	5	Over dolly frame under warhead
	A18	5	CGU–1/B	5	Left front frame lift fixture
	E18	5	CGU–1/B	5	Right front frame lift fixture
	A19	10	CGU–1/B	5	Left rear base lift fixture
	E19	10	CGU–1/B	5	Right rear base lift fixture

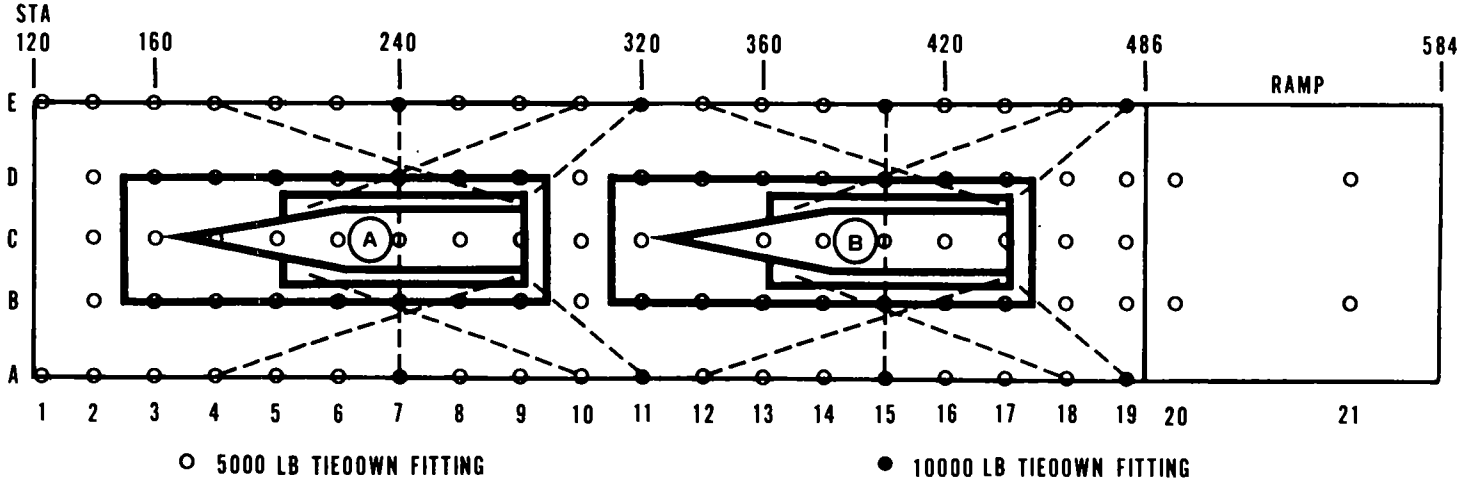
*MC–1 tiedown device may be used.



NOTE: UTILITY HATCH DOOR IS LOCATED IN THE CENTER OF THE FLOOR BETWEEN STATIONS 320 AND 360

DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
		REFERENCE POINT	STATION		
M480 CONTAINER BASE WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF BASE	230	309	2223

Figure 5. Tiedown diagram for one M480 container base, with Honest John warhead section, in CH-47 helicopter.



NOTE. UTILITY HATCH DOOR IS LOCATED IN THE CENTER OF THE FLOOR BETWEEN STATIONS 320 AND 360

ITEM	DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
			REFERENCE POINT	STATION		
(A)	M480 CONTAINER BASE WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF BASE	150	229	2223
(B)	M480 CONTAINER BASE WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF BASE	310	389	2223

Figure 6. Tiedown diagram for two M480 container bases, with Honest John warhead sections, in CH-47 helicopter.

(*e*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

(2) Loading.

(*a*) Insure that warhead section tiedown strap is secured, and that caster wheels are serviceable and locked parallel to the longitudinal axis of the dolly. Four men can prepare, load, and tie down the dolly in approximately 30 minutes.

(*b*) Position two helicopter auxiliary loading ramps to align with caster wheels.

(*c*) Position rolling shoring as shown in figure 7. Use 8-foot pieces on ramp and 12-foot pieces as first extension into cargo compartment. Use parking shoring as rolling shoring.

(*d*) Position caster-mounted dolly (with front end of warhead section towards helicopter ramp) on shoring, using forklift or crane.

(*e*) Form a bridle by passing two 10,000-pound-capacity chains around frame at front end of dolly. Attach helicopter winch cable hook to bridle and safety tie the hook to prevent accidental release. Safety typing the hook is not required when the hook is equipped with a serviceable safety latch.

(*f*) Place a wood block at ramp hinge, beneath towing cable, to protect helicopter floor.

(*g*) Position guides to adjust shoring, observe clearances, and signal winch operator as necessary.

(*h*) Winch the dolly into the helicopter to its tiedown location. Reposition rolling shoring for use as parking shoring.

(*i*) Apply fore and aft restraints to dolly, and release tension on the winch cable. The winch cable may remain attached to the container during flight for use in unloading.

(*j*) Turn two diagonally opposed caster wheels 90 degrees to the longitudinal axis of the dolly, and lock all four caster wheels to prevent movement.

(*k*) Tie down the dolly (on the shoring) in accordance with figure 8 and table 5.

(*l*) Reposition materials required during unloading, and tie down as directed by the helicopter commander.

(3) *Unloading.* Unloading procedures are essentially the reverse of loading procedures. Use the helicopter winch as a safety restraint when the dolly is manhandled from the helicopter. Care must be exercised when the dolly center of balance passes over ramp hinge. Four men can unload the dolly from the helicopter in approximately 15 minutes.

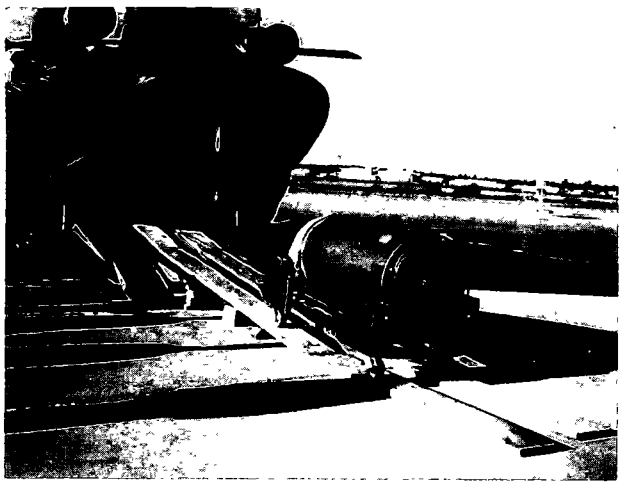


Figure 7. Honest John warhead section on caster-mounted dolly ready for loading in CH–47 helicopter. Note position of rolling and blocking shoring.

g. Transport of one caster-mounted dolly (configuration III), using plywood shoring.

(1) *Materials.*

(*a*) Parking shoring: one sheet, 4- by 8-foot by ½-inch.

(*b*) Rolling shoring: three sheets, 4- by 8-foot by ½-inch.

(*c*) Blocking shoring: lumber, four pieces, approximately 2- by 12- by 12-inch.

(*d*) Chains: two 10,000-pound-capacity (type used with C–2 or MB–1 tiedown devices), or equivalent.

(*e*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

(2) Loading.

(*a*) Observe guidance in *f*(2) (*a*) and (*b*) above.

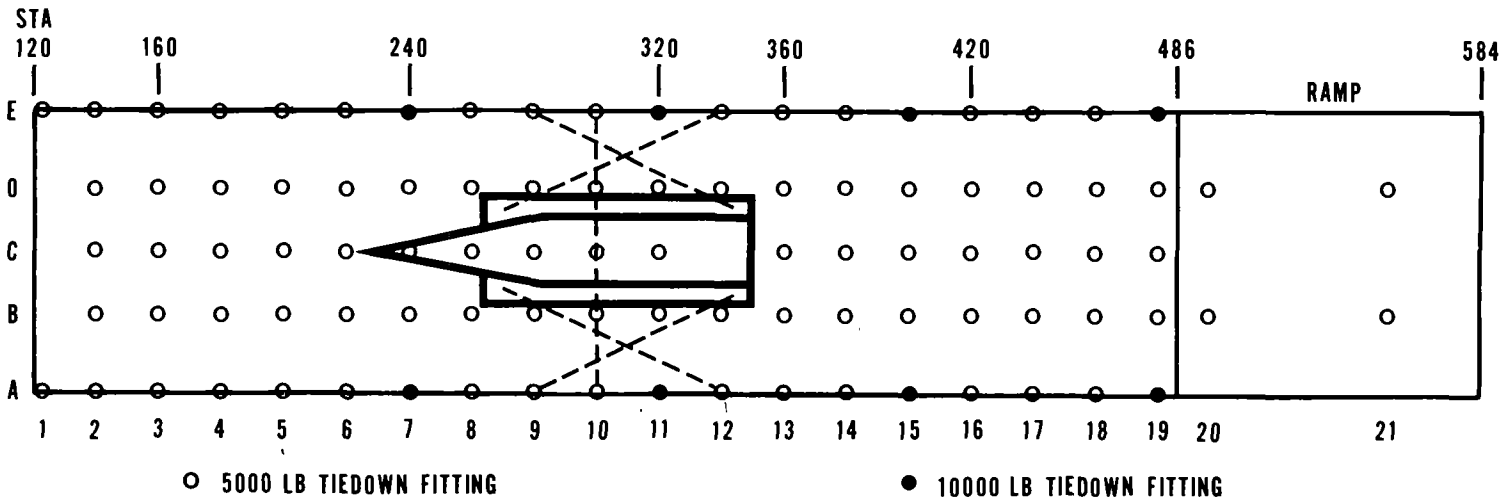
(*b*) Place blocking shoring under loading ramps to decrease angle of entry.

(*c*) Position rolling shoring: one sheet on

Table 5. Tiedown Data for One Caster-Mounted Dolly, With Honest John Warhead Section, in CH–47 Helicopter

Tiedown fitting		Tiedown device*		
Designation	Capacity in 1,000 lb	Type	Capacity in 1,000 lb	Attach to item
A9	5	CGU–1/B	5	Left rear frame lift fixture
E9	5	CGU–1/B	5	Right rear frame lift fixture
A10/E10	5	CGU–1/B	5	Over dolly frame under warhead
A12	5	CGU–1/B	5	Left front frame lift fixture
E12	5	CGU–1/B	5	Right front frame lift fixture

*MC–1 tiedown device may be used.



NOTE UTILITY HATCH DOOR IS LOCATED IN THE CENTER OF THE FLOOR BETWEEN STATIONS 320 AND 360

DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
		REFERENCE POINT	STATION		
CASTER-MOUNTED DOLLY WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF DOLLY	264	300	1670

Figure 8. Tiedown diagram for one caster-mounted dolly, with Honest John warhead section, in CH-47 helicopter.

ramp, one sheet extending from ramp hinge into cargo compartment, one sheet extending from end of ramp to ground, and one sheet on ground. Use parking shoring as rolling shoring.

(*d*) Observe guidance in *f*(2)(*d*) through (*l*) above.

(3) *Unloading.* Observe guidance in *f*(3) above.

h. Transport of two caster-mounted dollies (configuration III), using lumber shoring.

(1) *Materials.*

(*a*) Parking shoring: four pieces, 2- by 12-inch by 12-foot.

(*b*) Rolling shoring: four pieces, 2- by 12-inch by 12-foot; two pieces, 2- by 12-inch by 8-foot.

(*c*) Blocking shoring: approximately 22 pieces, 2- by 12- by 12-inch.

(*d*) Chains: two 10,000-pound-capacity (type used with C–2 or MB–1 tiedown devices), or equivalent.

(*e*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

(2) Loading.

(*a*) Insure that warhead section tiedown strap is secured, and that caster wheels are serviceable and locked parallel to the longitudinal axis of the dolly. Four men can prepare, load, and tie down each dolly in approximately 30 minutes.

(*b*) Position two helicopter auxiliary loading ramps to align with caster wheels.

(*c*) Position rolling shoring as shown in figure 7. Use 8-foot pieces on ramp, and place two 12-foot pieces as first extension into cargo compartment.

(*d*) Position caster-mounted dolly (with front end of warhead section towards helicopter ramp) on shoring, using forklift or crane.

(*e*) Form a bridle by passing two 10,000-pound-capacity chains around frame at front end of dolly. Attach helicopter winch cable hook to bridle, and safety tie the hook to prevent accidental release. Safety tying the hook is not required when the hook is equipped with a serviceable safety latch.

(*f*) Place a wood block at ramp hinge, beneath towing cable, to protect helicopter floor.

(*g*) Position guides to adjust shoring, observe clearances, and signal winch operator as necessary.

(*h*) Winch the first dolly onto helicopter ramp and reposition ground-level shoring into the helicopter at dolly tiedown location. Blocking shoring may be used to fill in the gap between the rolling and parking shoring.

(*i*) Winch the dolly into the helicopter to its tiedown location.

(*j*) Apply fore and aft restraints to the dolly, and remove winch cable and bridle for use on second dolly. Pass the winch cable beneath first dolly, and attach cable hook to bridle on second container.

(*k*) Load the second dolly as prescribed for the first dolly, and release tension on the winch cable. The bridle and winch cable may remain attached to the dolly during flight for use in unloading.

(*l*) For each dolly, turn two diagonally opposed caster wheels 90 degrees to the longitudinal axis of the dolly, and lock all four caster wheels to prevent movement.

(*m*) Tie down the dollies (on the shoring) in accordance with figure 9 and table 6.

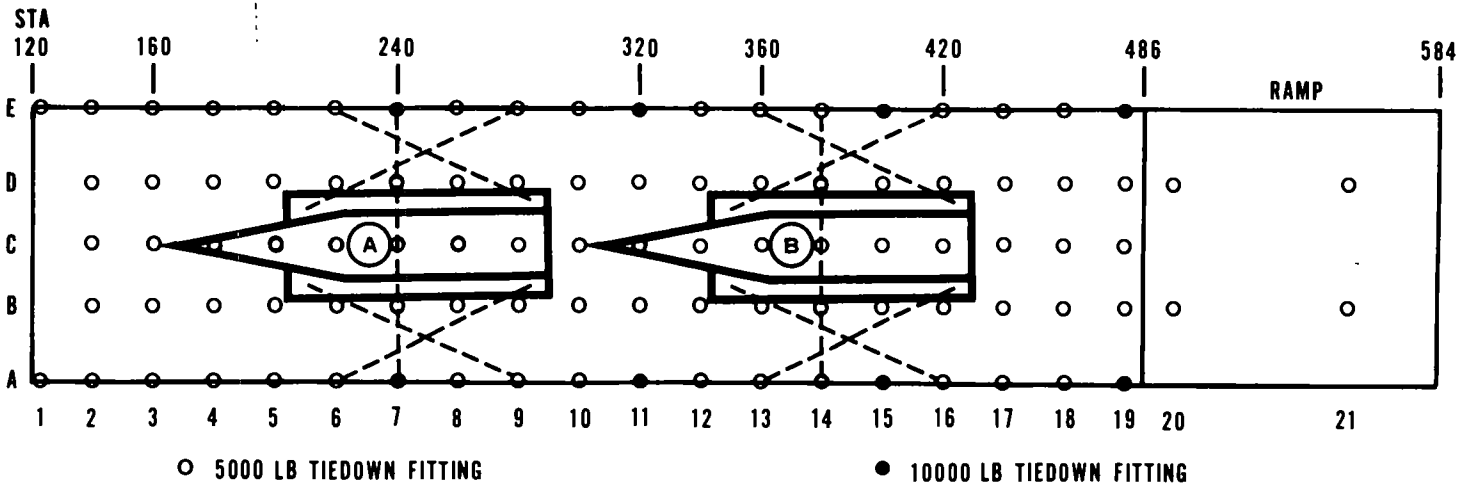
(*n*) Reposition materials required during unloading, and tie down as directed by the helicopter commander.

(3) *Unloading.* Unloading procedures are essentially the reverse of loading procedures. Use the helicopter winch as a safety restraint when the dolly is manhandled from the helicopter. Care must be exercised when the dolly center of balance passes over the ramp hinge. Four men can unload both dollies from the helicopter in approximately 30 minutes.

Table 6. Tiedown Data for Two Caster-Mounted Dollies, With Honest John Warhead Sections, in CH–47 Helicopter

Item	Tiedown fitting		Tiedown device*		Attach to item
	Designation	Capacity in 1,000 lb	Type	Capacity in 1,000 lb	
A	A6	5	CGU–1/B	5	Left rear frame lift fixture
	E6	5	CGU–1/B	5	Right rear frame lift fixture
	A7/E7	10	CGU–1/B	5	Over dolly frame under warhead
	A9	5	CGU–1/B	5	Left front frame lift fixture
	E9	5	CGU–1/B	5	Right front frame lift fixture
B	A13	5	CGU–1/B	5	Left rear frame lift fixture
	E13	5	CGU–1/B	5	Right rear frame lift fixture
	A14/E14	5	CGU–1/B	5	Over dolly frame under warhead
	A16	5	CGU–1/B	5	Left front frame lift fixture
	E16	5	CGU–1/B	5	Right front frame lift fixture

*MC–1 tiedown device may be used.



NOTE: UTILITY HATCH DOOR IS LOCATED IN THE CENTER OF THE FLOOR BETWEEN STATIONS 320 AND 360

ITEM	DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
			REFERENCE POINT	STATION		
(A)	CASTER-MOUNTED DOLLY WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF DOLLY	204	240	1670
(B)	CASTER-MOUNTED DOLLY WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF DOLLY	344	380	1670

Figure 9. Tiedown diagram for two caster-mounted dollies, with Honest John warhead sections, in CH–47 helicopter.

i. Transport of two caster-mounted dollies (configuration III), using plywood shoring.

(1) *Materials.*

(*a*) Parking shoring: two sheets, 4- by 8-foot by ½-inch.

(*b*) Rolling shoring: three sheets, 4- by 8-foot by ½-inch.

(*c*) Blocking shoring: lumber, four pieces, approximately 2- by 12- by 12-inch.

(*d*) Chains: two 10,000-pound-capacity (type used with C-2 or MB-1 tiedown devices), or equivalent.

(*e*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

(2) Loading.

(*a*) Observe guidance in *h*(2)(*a*) and (*b*) above.

(*b*) Place blocking shoring under loading ramps to decrease angle of entry.

(*c*) Position rolling shoring: one sheet on ramp, one sheet extending from ramp hinge into cargo compartment, one sheet extending from end of ramp to ground, and one sheet on ground. Use parking shoring as rolling shoring.

(*d*) Observe guidance in *h*(2)(*d*) through (*n*) above.

(3) *Unloading.* Observe guidance in *h*(3) above.

6. Internal Transport by CH–54 Helicopter Universal Military Pod

WARNING

Insure that the universal military pod is secured to the CH–54 helicopter to preclude jettisoning the pod either deliberately or inadvertently.

NOTE

Materials and procedures prescribed in *a* through *i* below apply when the CH–54 helicopter universal military pod is in flight configuration. See *j* below for alternate materials and procedures when CH–54 (pod) is not in flight configuration.

NOTE

The following procedures (*a*, *b*, *c*, and *d*) describe the loading and tiedown of the Honest John warhead section in the M480 shipping and storage container. Loading and tie down of the XM480E1 container are identical except that the tie down and lifting fixtures on the M480 container are bars; whereas, in most cases, the tie down and lifting fixtures on the XM480E1 container are rings.

a. Transport of one M480 container (configuration I), using lumber shoring.

(1) *Materials.*

(*a* Parking shoring: two pieces, 2- by 12-inch by 12-foot.

(*b*) Rolling shoring: four pieces, 2- by 12-inch by 12-foot.

(*c*) Bridge shoring: plywood, one sheet, 4- by 8-foot by ½-inch (may be used but is not required).

(*d*) Blocking shoring: approximately 50 pieces, 2- by 12- by 12-inch.

(*e*) Wheeled or roller conveyor: two sections, 10-foot (NSN 3910–00–903–1303), or equivalent.

(*f*) Chains: two 10,000-pound capacity (type used with C–2 or MB–1 tie down devices), or equivalent.

(*g*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

(*h*) Truck: wrecker, medium, 5-ton, 6x6, M543A2, with winch, or suitable substitute.

(*i*) Snatch block, tackle, single-sheave: two. Snatch block (NSN 3940–00–239–0372), organic to the M543A2 wrecker, or equivalent block may be used.

(*j*) Plywood: two pieces, 2- by 2-foot by ½-inch, or equivalent.

(2) Loading.

(*a*) Position shoring and conveyor, wheels down, as shown in figure 10. Use parking shoring as rolling shoring. Four men can prepare, load, and tie down the container in approximately 30 minutes.

(*b*) Position container (front end towards pod) on conveyors using forklift or crane.

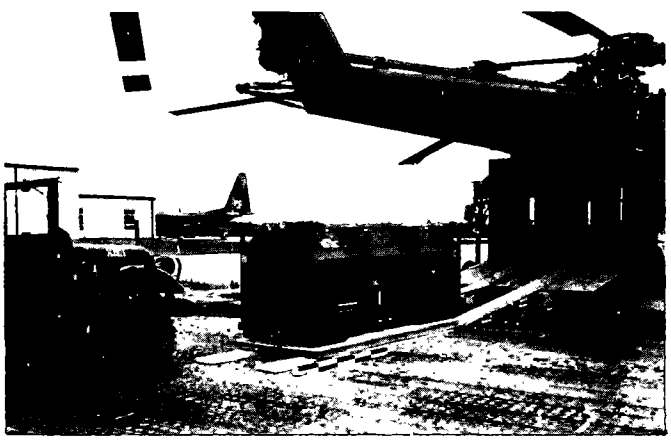


Figure 10. M480 container, with Honest John warhead section positioned for loading into universal military pod. Note position of shoring. Plywood may be used between container and conveyor, but is not required.

(*c*) Attach snatch blocks, using tie down chains, to pod tie down fittings A1 and D1. Adjust chains to insure that container is winched down the center line of the pod. Place plywood pieces beneath blocks to protect floor. See figure 11.

(*d*) Pass towing cable through opened snatch blocks, and attach cable hook to towing eye on front end of container base. Safety tie the hook to prevent accidental release. Safety tying the hook is not required when the hook is equipped with a serviceable safety latch. Close and lock blocks.

(*e*) Place wood blocks at ramp hinge, beneath towing cable, to protect pod floor.

(*f*) Position guides to adjust shoring, observe clearances, and signal truck-winch operator as necessary.

(*g*) Winch container into the pod by either taking up on the truck-winch or by backing the truck with winch locked. Reposition ground-level shoring into the pod at container tie down location

(*h*) Tie down the container (on the conveyors) in accordance with figure 12 and table 7. Remove towing cable and blocks.

(*i*) Reposition materials required during unloading, and tie down as directed by the helicopter commander.

(3) *Unloading.* Unloading procedures are essentially the reverse of loading procedures. Use towing cable as a safety restraint when the container is manhandled from the pod. Care must be exercised when container center of balance passes over ramp hinge. Four men can unload the container from the pod in approximately 15 minutes.

b. Transport of one M480 container (configuration I), using plywood shoring.

(1) *Materials.*

(*a*) Parking shoring: two sheets, 4- by 8-foot by ½-inch.

(*b*) Rolling shoring: three sheets, 4- by 8-foot by ½-inch.

(*c*) Bridge shoring: one sheet, 4- by 8-foot by ½-inch (may be used but is not required).

(*d*) Blocking shoring: lumber, approximately 50 pieces, 2- by 12- by 12-inch.

(*e*) Wheeled or roller conveyor: two sections, 10-foot (NSN 3910–00–903–1303), or equivalent.

(*f*) Chains: two 10,000-pound-capacity (type used with C–2 or MB–1 tiedown devices), or equivalent.

(*g*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

(*h*) Truck: wrecker, medium, 5-ton, 6x6, M543A2, with winch, or suitable substitute.

(*i*) Snatch block, tackle, single-sheave: two. Snatch block (NSN 3940–00–239–0372), organic to the M543A2 wrecker, or equivalent block may be used.

(*j*) Plywood: two pieces, 2- by 2-foot by ½-inch, or equivalent.

(2) Loading.

(*a*) Observe guidance in *a*(2)(*a*) and (*b*) above.

(*b*) Position rolling shoring: one sheet on ramp, one sheet extending from ramp hinge into pod, one sheet extending from end of ramp to ground, and two sheets laid end-to-end on ground. Use parking shoring as rolling shoring.

(*c*) Observe guidance in *a*(2)(*c*) through (*i*) above.

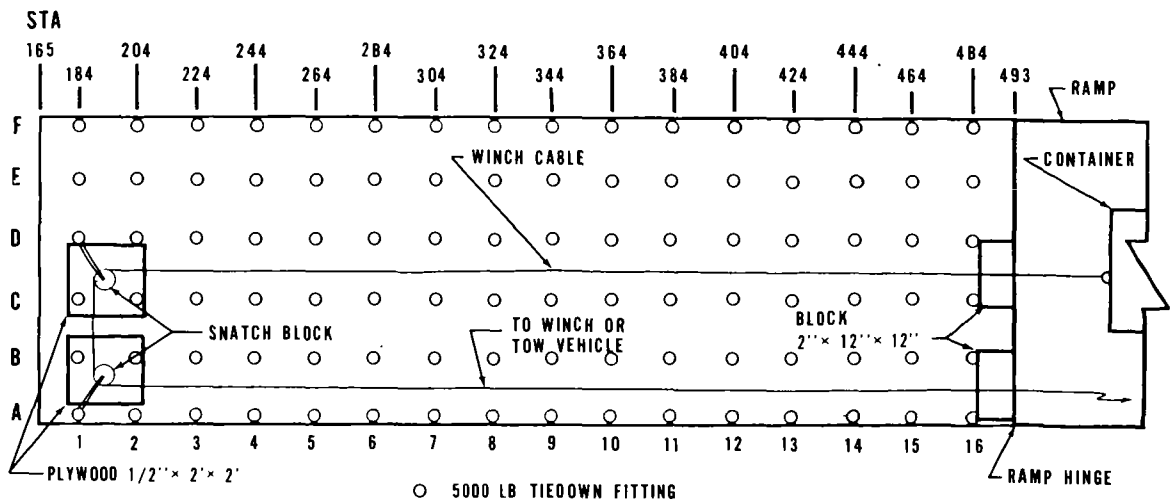
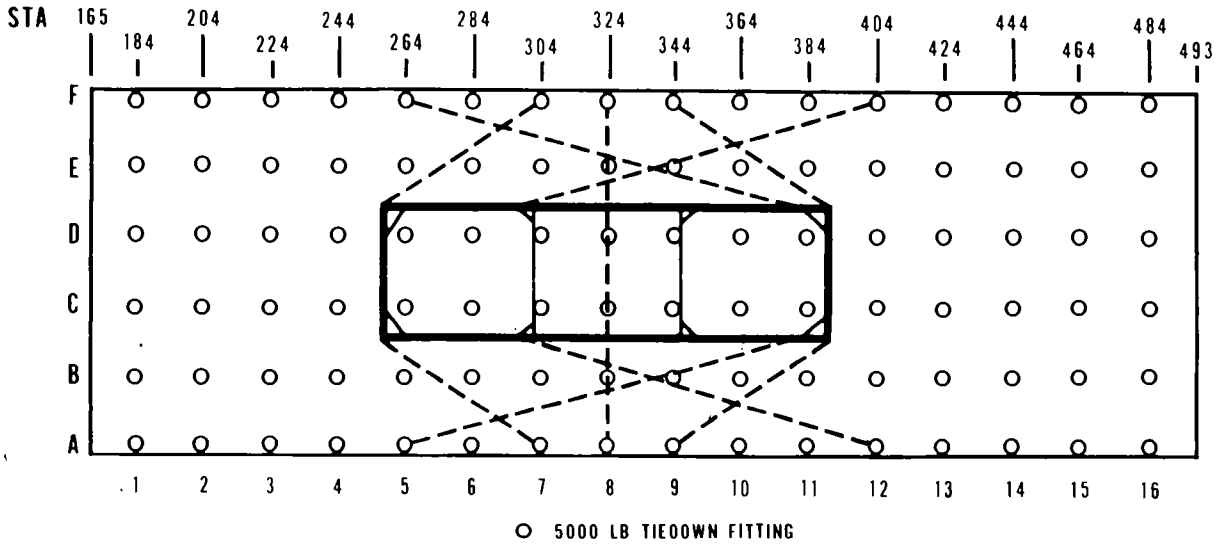


Figure 11. Winching diagram for loading Honest John warhead section containers into CH–54 helicopter universal military pod.



DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
		REFERENCE POINT	STATION		
M480 CONTAINER WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	259	338	2663

Figure 12. Tiedown diagram for one M480 container, with Honest John warhead section, in CH-54 helicopter universal military pod.

Table 7. Tiedown Data for One M480 Container With Honest John Warhead Section, in CH–54 Helicopter Universal Military Pod

Tiedown fitting		Tiedown device*		
Designation	Capacity in 1,000 lb	Type	Capacity in 1,000 lb	Attach to item
A5	5	CGU–1/B	5	Left rear lift fixture
F5	5	CGU–1/B	5	Right rear lift fixture
A7	5	CGU–1/B	5	Around upper left front vertical frame
F7	5	CGU–1/B	5	Around upper right front vertical frame
A8/F8	5	CGU–1/B	5	Over the container
A9	5	CGU–1/B	5	Around upper left rear vertical frame
F9	5	CGU/1/B	5	Around upper right rear vertical frame
A12	5	CGU–1/B	5	Left front lift fixture
F12	5	CGU–1/B	5	Right front lift fixture

*MC–1 tiedown device may be used.

(3) *Unloading.* Observe guidance in *a*(3) above.

c. Transport of two M480 containers (configuration I), using lumber shoring.

(1) *Materials.*

(*a*) Parking shoring: four pieces, 2- by 12-inch by 12-foot.

(*b*) Rolling shoring: four pieces, 2- by 12-inch by 12-foot.

(*c*) Bridge shoring: plywood, two sheets, 4- by 8-foot by ½-inch (may be used but is not required).

(*d*) Blocking shoring: approximately 50 pieces, 2- by 12- by 12-inch.

(*e*) Wheeled or roller conveyor: four sections, 10-foot (NSN 3910–00–903–1303), or equivalent.

(*f*) Chains: two, 10,000-pound-capacity (type used with C–2 or MB–1 tiedown devices), or equivalent.

(*g*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

(*h*) Truck: wrecker, medium, 5-ton, 6x6, M543A2, with winch, or suitable substitute.

(*i*) Snatch block, tackle, single sheave: two. Snatch block (NSN 3940–00–239–0372), organic to the M543A2 wrecker, or equivalent block may be used.

(*j*) Plywood: two pieces, 2- by 2-foot by ½-inch, or equivalent.

(2) Loading.

(*a*) Position shoring and conveyors, wheels down, as shown in figure 10. Use parking shoring as rolling shoring. Four men can prepare, load, and tie down each container in approximately 30 minutes.

(*b*) Position container (front end towards pod) on conveyors using forklift or crane.

(*c*) Attach snatch blocks, using tiedown chains, to pod tiedown fittings A1 and D1. Adjust chains to insure that container is winched down the centerline of the pod. Place plywood pieces beneath blocks to protect floor. See figure 11.

(*d*) Pass towing cable through opened snatch blocks, and attach cable hook to towing eye on front end of container base. Safety tie the hook to prevent accidental release. Safety tying the hook is not required when the hook is equipped with a serviceable safety latch. Close and lock blocks.

(*e*) Place wood blocks at ramp hinge, beneath towing cable, to protect pod floor.

(*f*) Position guides to adjust shoring, observe clearances, and signal truck-winch operator as necessary.

(*g*) Winch first container into the pod by either taking up on the truck winch or by backing the truck with winch locked. Position shoring in the pod at container tiedown location.

(*h*) Apply fore and aft restraints to container, and remove winch cable for use on second container.

(*i*) Attach snatch blocks, using tiedown chains, to pod tiedown fittings A9 and D9, and load second container as prescribed for first container.

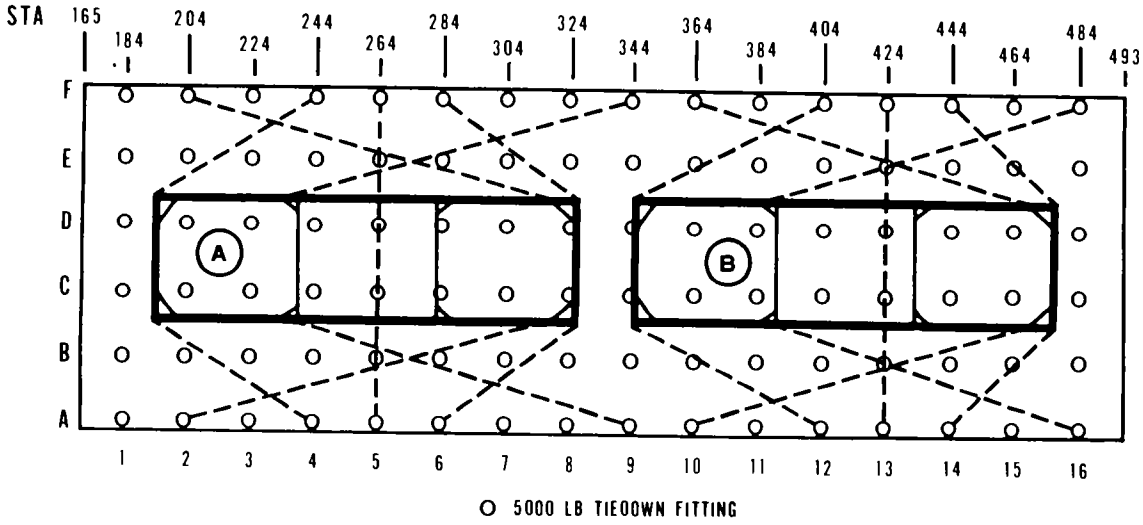
(*j*) Tie down the containers (on the conveyors) in accordance with figure 13 and table 8. Remove towing cable and blocks.

(*k*) Reposition materials required during unloading, and tie down as directed by the helicopter commander.

(3) *Unloading.* Unloading procedures are essentially the reverse of loading procedures. Use towing cable as a safety restraint when each container is manhandled from the pod. Care must be exercised when container center of balance passes over ramp hinge. Four men can unload both containers from the pod in approximately 30 minutes.

d. Transport of two M480 containers (configuration I), using plywood shoring.

(1) *Materials.*



ITEM	DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
			REFERENCE POINT	STATION		
(A)	M48D CONTAINER WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	194	273	2663
(B)	M480 CONTAINER WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	344	423	2663

Figure 13. Tiedown diagram for two M480 containers, with Honest John warhead sections, in CH–54 helicopter universal military pod.

Table 8. Tiedown Data for Two M480 Containers, With Honest John Warhead Sections, in CH–54 Helicopter Universal Military Pod

Item	Tiedown fitting		Tiedown device*		Attach to item
	designation	capacity in 1,000 lb	type	capacity in 1,000 lb	
A	A2	5	CGU–1/B	5	Left rear lift fixture
	F2	5	CGU–1/B	5	Right rear lift fixture
	A4	5	CGU–1/B	5	Around upper left front vertical frame
	F4	5	CGU–1/B	5	Around upper right front vertical frame
	A5/F5	5	CGU–1/B	5	Over the container
	A6	5	CGU–1/B	5	Around upper left rear vertical frame
	F6	5	CGU–1/B	5	Around upper right rear vertical frame
	A9	5	CGU–1/B	5	Left front lift fixture
	F9	5	CGU–1/B	5	Right front lift fixture
B	A10	5	CGU–1/B	5	Left rear lift fixture
	F10	5	CGU–1/B	5	Right rear lift fixture
	A12	5	CGU–1/B	5	Around upper left front vertical frame
	F12	5	CGU–1/B	5	Around upper right front vertical frame
	A13/F13	5	CGU–1/B	5	Over the container
	A14	5	CGU–1/B	5	Around upper left rear vertical frame
	F14	5	CGU–1/B	5	Around upper right rear vertical frame
	A16	5	CGU–1/B	5	Left front lift fixture
	F16	5	CGU–1/B	5	Right front lift fixture

*MC–1 tiedown device may be used.

(*a*) Parking shoring: three sheets, 4- by 8-foot by ½-inch.

(*b*) Rolling shoring: three sheets, 4- by 8-foot by ½-inch.

(*c*) Bridge shoring: two sheets, 4- by 8-foot by ½-inch (may be used but is not required).

(*d*) Blocking shoring: lumber, approximately 50 pieces, 2-by 12- by 12-inch.

(*e*) Wheeled or roller conveyor: four sections, 10-foot (NSN 3910–00–903–1303), or equivalent.

(*f*) Chains: two, 10,000-pound-capacity (type used with C–2 or MB–1 tiedown devices), or equivalent.

(*g*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

(*h*) Truck: wrecker, medium, 5-ton, 6x6, M543A2, with winch, or suitable substitute.

(*i*) Snatch block, tackle, single sheave: two. Snatch block (NSN 3940–00–239–0372), organic to the M543A2 wrecker, or equivalent block may be used.

(*j*) Plywood: two pieces, 2- by 2-foot by ½-inch, or equivalent.

(2) *Loading.*

(*a*) Position rolling shoring: one sheet on ramp, one sheet extending from ramp hinge into cargo compartment, one sheet extending from end of ramp to ground, and two sheets (end-to-end) on ground. Use parking shoring as rolling shoring. Four men can prepare, load, and tie down each container in approximately 30 minutes.

(*b*) Position conveyors (wheels down) and bridge shoring as shown in figure 10.

(*c*) Observe guidance in *c*(2)(*b*) through (*k*) above.

(3) *Unloading.* Observe guidance in *c*(3) above.

e. Transport of one or two M480 container bases (configuration II), using lumber or plywood shoring.

(1) The warhead section on the M480 or XM480E1 container base differs from the warhead section in the M480 or XM480E1 shipping and storage container only in that the container cover is removed from the container base.

(2) The materials and loading and unloading procedures are identical to those prescribed in *a* and *b* or *c* and *d* above. The container base is tied down in accordance with figure 14 and table 9 or figure 15 and table 10.

f. Transport of one caster-mounted dolly (configuration III), using lumber shoring.

(1) *Materials.*

(*a*) Parking shoring: two pieces, 2- by 12-inch by 12-foot.

(*b*) Rolling shoring: four pieces, 2- by 12-inch by 12-foot.

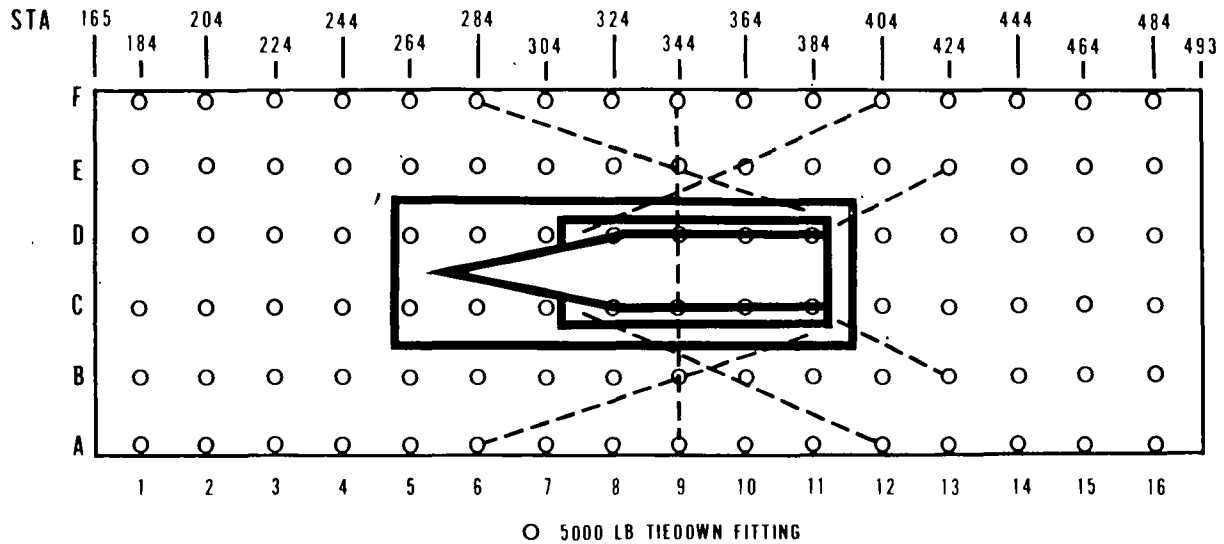
(*c*) Blocking shoring: approximately 50 pieces, 2- by 12- and 12-inch.

(*d*) Chains: two, 10,000-pound-capacity (type used with C–2 or MB–1 tiedown devices), or equivalent.

(*e*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

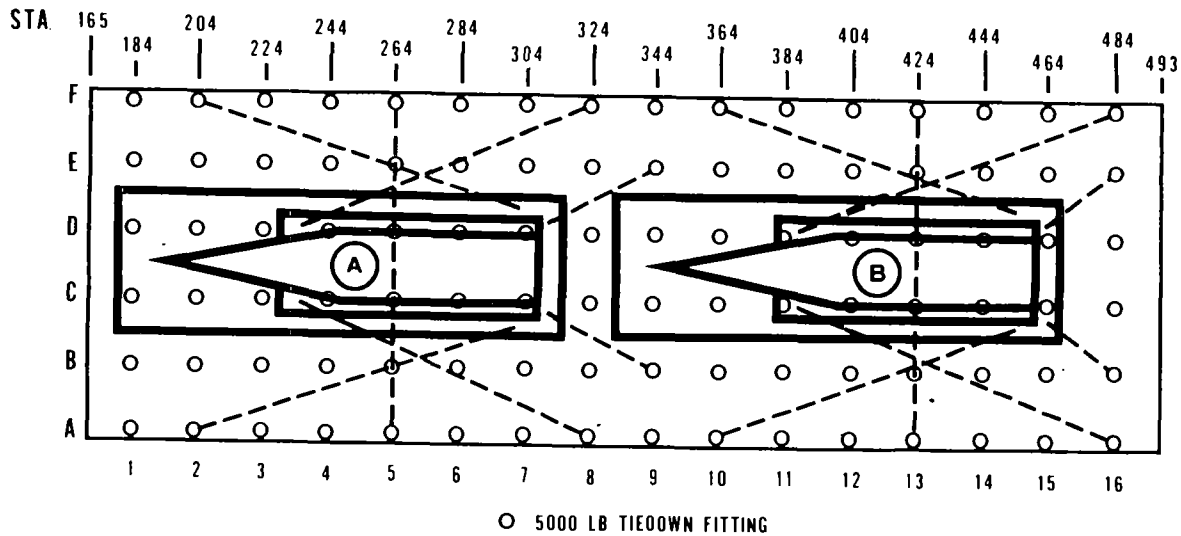
(*f*) Truck: wrecker, medium, 5-ton, 6x6, M543A2, with winch, or suitable substitute.

(*g*) Snatch block, tackle, single sheave: two. Snatch block (NSN 3940–00–239–0372), or-



DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
		REFERENCE POINT	STATION		
M480 CONTAINER BASE WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF BASE	260	339	2223

Figure 14. Tiedown diagram for one M480 container base, with Honest John warhead section, in CH-54 helicopter universal military pod.



ITEM	DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
			REFERENCE POINT	STATION		
(A)	M480 CONTAINER BASE WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF BASE	180	259	2223
(B)	M480 CONTAINER BASE WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF BASE	334	413	2223

Figure 15. Tiedown diagram for two M480 container bases, with Honest John warhead sections, in CH-54 helicopter universal military pod.

Table 9. Tiedown Data for One M480 Container Base, With Honest John Warhead Section, in CH–54 Helicopter Universal Military Pod

Tiedown fitting		Tiedown device*		
Designation	Capacity in 1,000 lb	Type	Capacity in 1,000 lb	Attach to item
A6	5	CGU–1/B	5	Left rear frame lift fixture
F6	5	CGU–1/B	5	Right rear frame lift fixture
A9/F9	5	CGU–1/B	5	Over dolly frame under warhead
A12	5	CGU–1/B	5	Left front frame lift fixture
F12	5	CGU–1/B	5	Right front frame lift fixture
B13	5	CGU–1/B	5	Left rear base lift fixture
E13	5	CGU–1/B	5	Right rear base lift fixture

*MC–1 tiedown device may be used.

Table 10. Tiedown Data for Two M480 Container Bases, With Honest John Warhead Sections, in CH–54 Helicopter Universal Military Pod

Item	Tiedown fitting		Tiedown device*		
	Designation	Capacity in 1,000 lb	Type	Capacity in 1,000 lb	Attach to item
A	A2	5	CGU–1/B	5	Left rear frame lift fixture
	F2	5	CGU–1/B	5	Right rear frame lift fixture
	A5/F5	5	CGU–1/B	5	Over dolly frame under warhead
	A8	5	CGU–1/B	5	Left front frame lift fixture
	F8	5	CGU–1/B	5	Right front frame lift fixture
	B9	5	CGU–1/B	5	Left rear base lift fixture
	E9	5	CGU–1/B	5	Right rear base lift fixture
B	A10	5	CGU–1/B	5	Left rear frame lift fixture
	F10	5	CGU–1/B	5	Right rear frame lift fixture
	A13/F13	5	CGU–1/B	5	Over dolly frame under warhead
	A16	5	CGU–1/B	5	Left front frame lift fixture
	F16	5	CGU–1/B	5	Right front frame lift fixture
	B16	5	CGU–1/B	5	Left rear base lift fixture
	E16	5	CGU–1/B	5	Right rear base lift fixture

*MC–1 tiedown device may be used.

ganic to the M543A2 wrecker, or equivalent block may be used.

(*h*) Plywood: two pieces, 2- by 2-foot by ½-inch, or equivalent.

(2) Loading.

(*a*) Insure that warhead section tiedown strap is secured, and that caster wheels are serviceable and locked parallel to the longitudinal axis of the dolly. Four men can prepare, load, and tie down the dolly in approximately 30 minutes.

(*b*) Position shoring on ground, on ramp, and forward of ramp hinge. Use parking shoring as rolling shoring.

(*c*) Block ramp and ramp shoring as shown in figure 10.

(*d*) Position dolly (with front end of warhead section towards pod) on ground shoring, using forklift or crane.

(*e*) Form a bridle by passing two 10,000-pound capacity chains around frame at front end of dolly.

(*f*) Attach snatch blocks, using tiedown chains, to pod tiedown fittings A1 and D1. Adjust chains to insure that dolly is winched down the center line of the pod. Place plywood pieces beneath blocks to protect floor. See figure 11.

(*g*) Pass towing cable through opened snatch blocks, and attach cable hook to bridle on dolly. Safety tie the hook to prevent accidental release. Safety tying the hook is not required when the hook is equipped with a serviceable safety latch. Close and lock blocks.

(*h*) Place wood blocks at ramp hinge, beneath towing cable, to protect pod floor.

(*i*) Position guides to adjust shoring, observe clearances, and signal truck-winch operator as necessary.

(*j*) Winch dolly into the pod by either taking up on the truck winch or by backing the truck with winch locked. Reposition ground-level shoring into the pod at dolly tiedown location.

(*k*) Apply fore and aft restraints to dolly, and remove towing cable and blocks.

(*l*) Turn two diagonally opposed caster wheels 90 degrees to the longitudinal axis of the dolly, and lock all four caster wheels to prevent movement.

(*m*) Tie down the dolly (on the shoring) in accordance with figure 16 and table 11.

(*n*) Reposition materials required during unloading, and tie down as directed by the helicopter commander.

(3) *Unloading.* Unloading procedures are essentially the reverse of loading procedures. Use the towing cable as a safety restraint when the dolly is manhandled from the pod. Care must be exercised when dolly center of balance passes over ramp hinge. Four men can unload the dolly from the pod in approximately 15 minutes.

g. Transport of one caster-mounted dolly (configuration III), using plywood shoring.

(1) *Materials.*

(*a*) Parking shoring: one sheet, 4- by8-foot by ½-inch.

(*b*) Rolling shoring: three sheets, 4- by 8-foot by ½-inch.

(*c*) Blocking shoring: lumbering, approximately 50 pieces, 2- by 12- by 12-inch.

(*d*) Chains: two, 10,000-pound-capacity (type used with C–2 or MB–1 tiedown devices), or equivalent.

(*e*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

(*f*) Truck, wrecker, medium, 5-ton, 6x6, M543A2, with winch, or suitable substitute.

(*g*) Snatch block, tackle, single sheave: two. Snatch block (NSN 3940–00–239–0372), organic to the M543A2 wrecker, or equivalent block may be used.

(*h*) Plywood: two pieces, 2- by 2-foot by ½-inch, or equivalent.

(2) *Loading.*

(*a*) Insure that warhead section tiedown strap is secured, and that caster wheels are serviceable and locked parallel to the longitudinal axis of the dolly. Four men can prepare, load and tie down the dolly in approximately 30 minutes.

(*b*) Position rolling shoring: one sheet on ramp, one sheet extending from ramp hinge into cargo compartment, one sheet extending from end of ramp to ground, and one sheet on ground. Use parking shoring as rolling shoring.

(*c*) Observe guidance in *f*(2)(*c*) through (*n*) above.

(3) *Unloading.* Observe guidance in *f*(3) above.

h. Transport of two caster-mounted dollies (configuration III), using lumber shoring.

(1) *Materials.*

(*a*) Parking shoring: four pieces, 2- by 12-inch by 12-foot.

(*b*) Rolling shoring: four pieces, 2- by 12-inch by 12-foot.

(*c*) Blocking shoring: approximately 50 pieces, 2- by 12- by 12-inch.

(*d*) Chains: two 10,000-pound-capacity (type used with C–2 or MB–1 tiedown devices), or equivalent.

(*e*) Truck, forklift or crane; one 6,000-pound-minimum-capacity.

(*f*) Truck: wrecker, medium, 5-ton, 6x6, M543A2, with winch, or suitable substitute.

(*g*) Snatch block, tackle, single sheave: two. Snatch block (NSN 3940–00–239–0372), organic to the M543A2 wrecker, or equivalent block may be used.

(*h*) Plywood: two pieces, 2- by 2-foot by ½-inch, or equivalent.

(2) *Loading.*

(*a*) Insure that warhead section tiedown strap is secured, and that caster wheels are serviceable and locked parallel to the longitudinal axis of the dolly. Four men can prepare, load, and tie down each dolly in approximately 30 minutes.

(*b*) Position shoring on ground, on ramp, and forward of ramp hinge. Use parking shoring as rolling shoring.

(*c*) Block ramp and ramp shoring as shown in figure 10.

(*d*) Position dolly (with front end of warhead section towards pod) on ground shoring, using forklift or crane.

(*e*) Form a bridle by passing two 10,000-pound-capacity chains around frame at front end of dolly.

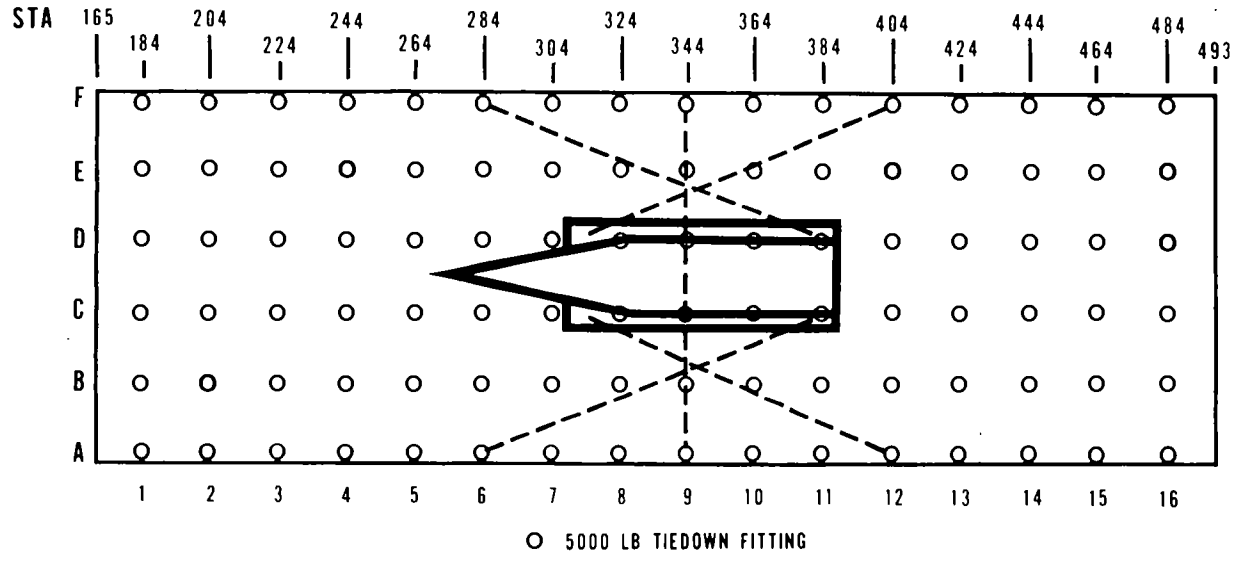
(*f*) Attach snatch blocks, using tiedown chains, to pod tiedown fittings A1 and D1. Adjust chains to insure that dolly is winched down the center line of the pod. Place plywood pieces beneath blocks to protect floor. See figure 11.

(*g*) Pass towing cable through opened snatch blocks, and attach cable hook to bridle on

Table 11. Tiedown Data for One Caster-Mounted Dolly, With Honest John Warhead Section, in CH–54 Helicopter Universal Military Pod

Tiedown fitting		Tiedown device*		
Designation	Capacity in 1,000 lb	Type	Capacity in 1,000 lb	Attach to item
A6	5	CGU–1/B	5	Left rear frame lift fixture
F6	5	CGU–1/B	5	Right rear frame lift fixture
A9/F9	5	CGU–1/B	5	Over dolly frame under warhead
A12	5	CGU–1/B	5	Left front frame lift fixture
F12	5	CGU–1/B	5	Right front frame lift fixture

*MC–1 tiedown device may be used.



DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
		REFERENCE POINT	STATION		
CASTER-MOUNTED DOLLY WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF DOLLY	308	344	1670

Figure 16. Tiedown diagram for one caster-mounted dolly, with Honest John warhead section, in CH–54 helicopter universal military pod.

dolly. Safety tie the hook to prevent accidental release. Safety tying the hook is not required when the hook is equipped with a serviceable safety latch. Close and lock blocks.

(*h*) Place wood blocks at ramp hinge, beneath towing cable, to protect pod floor.

(*i*) Position guides to adjust shoring, observe clearances, and signal truck-winch operator as necessary.

(*j*) Winch the first dolly into the pod by either taking up on the truck-winch or by backing the truck with winch locked. Reposition ground-level shoring into the pod at dolly tiedown location.

(*k*) Apply fore and aft restraints to dolly, and remove towing cable and blocks for use on second dolly.

(*l*) Attach snatch blocks, using tiedown chains, to pod tiedown fittings A9 and D9, and load second dolly as prescribed for first dolly.

(*m*) Apply fore and aft restraints to dolly, and remove towing cable and blocks.

(*n*) For each dolly, turn two diagonally opposed caster wheels 90 degrees to the longitudinal axis of the dolly, and lock all four caster wheels to prevent movement.

(*o*) Tiedown the dollies (on the shoring) in accordance with figure 17 and table 12.

(*p*) Reposition materials required during unloading, and tie down as directed by the helicopter commander.

(3) *Unloading.* Unloading procedures are essentially the reverse of loading procedures. Use the towing cable as a safety restraint when each dolly is manhandled from the pod. Care must be exercised when dolly center of balance passes over ramp hinge. Four men can unload both dollies from the pod in approximately 30 minutes.

i. Transport of two caster-mounted dollies (configuration III), using plywood shoring.

(1) *Materials.*

(*a*) Parking shoring: two sheets, 4- by 8-foot by ½-inch.

(*b*) Rolling shoring: three sheets, 4- by 8-foot by ½-inch.

(*c*) Blocking shoring: lumber, approximately 50 pieces, 2- by 12- by 12-inch.

(*d*) Chains: two 10,000-pound-capacity (type used with C–2 or MB–1 tiedown devices), or equivalent.

(*e*) Truck, forklift or crane: one 6,000-pound-minimum-capacity.

(*f*) Truck: wrecker, medium, 5-ton, 6x6, M543A2, with winch, or suitable substitute.

(*g*) Snatch block, tackle, single sheave: two. Snatch block (NSN 3940–00–239–0372), organic to the M543A2 wrecker, or equivalent block may be used.

(*h*) Plywood: two pieces, 2- by 2-foot by ½-inch, or equivalent.

(2) *Loading.*

(*a*) Insure that warhead section tiedown strap is secured, and that caster wheels are serviceable and locked parallel to the longitudinal axis of the dolly. Four men can prepare, load, and tie down each dolly in approximately 30 minutes.

(*b*) Position rolling shoring: one sheet on ramp, one sheet extending from ramp hinge into cargo compartment, one sheet extending from end of ramp to ground, and one sheet on ground. Use parking shoring as rolling shoring.

(*c*) Observe guidance in *h*(2)(*c*) through (*p*) above.

(3) *Unloading.* Observe guidance in *h*(3) above.

j. Alternate materials and procedures for transporting one or two Honest John warhead sections in CH–54 helicopter universal military pod with pod in other than flight configuration.

(1) The pod may be loaded and unloaded when:

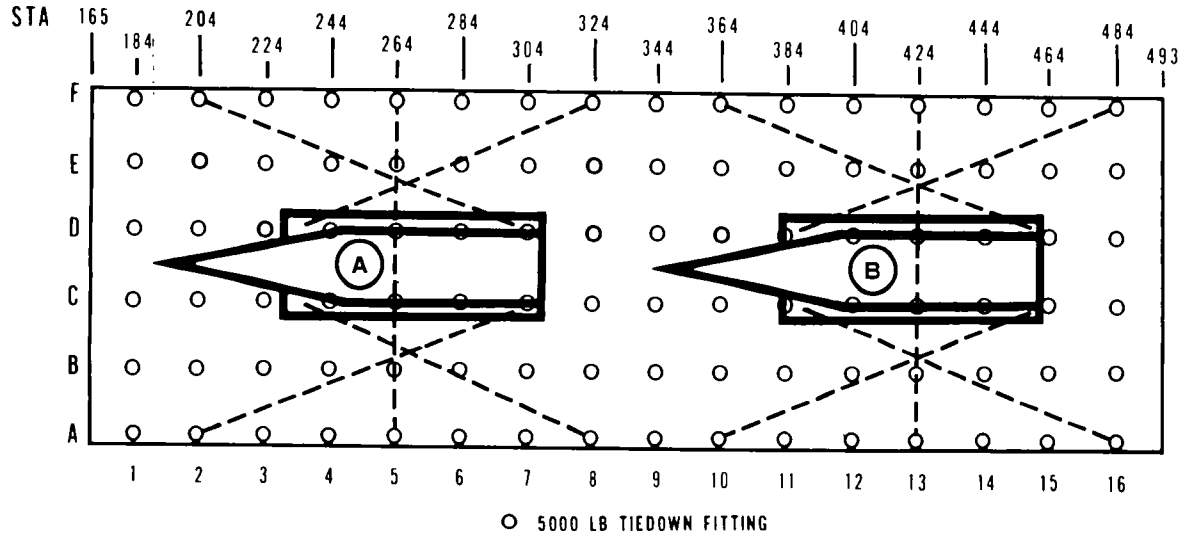
(*a*) The helicopter (CH–54A only) is in a kneeled position.

(*b*) The pod four-wheeled system is

Table 12. Tiedown Data for Two Caster-Mounted Dollies, With Honest John Warhead Sections, in CH–54 Helicopter Universal Military Pod

Item	Tiedown fitting		Tiedown device*		Attach to item
	Designation	Capacity in 1,000 lb	Type	Capacity in 1,000 lb	
A	A2	5	CGU–1/B	5	Left rear frame lift fixture
	F2	5	CGU–1/B	5	Right rear frame lift fixture
	A5/F5	5	CGU–1/B	5	Over dolly frame under warhead
	A8	5	CGU–1/B	5	Left front frame lift fixture
	F8	5	CGU–1/B	5	Right front frame lift fixture
B	A10	5	CGU–1/B	5	Left rear frame lift fixture
	F10	5	CGU–1/B	5	Right rear frame lift fixture
	A13/F13	5	CGU–1/B	5	Over dolly frame under warhead
	A16	5	CGU–1/B	5	Left front frame lift fixture
	F16	5	CGU–1/B	5	Right front frame lift fixture

*MC–1 tiedown device may be used.



ITEM	DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
			REFERENCE POINT	STATION		
(A)	CASTER-MOUNTED DOLLY WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF DOLLY	228	264	1670
(B)	CASTER-MOUNTED DOLLY WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF DOLLY	382	418	1670

Figure 17. Tiedown diagram for two caster-mounted dollies, with Honest John warhead sections, in CH–54 helicopter universal military pod.

fully retracted and pod is resting on the ground.

(2) Procedures for loading and unloading the pod when in one of the configurations described in (1) above are the same as prescribed throughout this paragraph. However, with the pod floor at lower levels, the ramp angle is reduced and less blocking shoring is required.

7. External Transport by UH–1-Series and CH–47 and CH–54 Helicopters

WARNING

The contents of paragraph 7 are for information and training purposes only and are not to be construed as authority for external transport of Honest John warhead sections. Only dummy loads may be used for practice and/or training exercises. War reserve nuclear weapons will not be moved by external transport except in emergency conditions (i.e., emergency evacuation from fire or flood) when the situation does not allow time to prepare and move the nuclear weapons by internal transport.

WARNING

Always assume that a charge of static electricity is present on the helicopter. Use of some type of discharge apparatus (fig 4–1, TM 55–450–19) to ground the hook and discharge electricity is necessary to prevent shock when the hook is touched. After discharge of electricity, the hook is grasped quickly and firmly and held, if possible, until the hookup is completed. If contact with the hook is lost after initial grounding, the hook must be grounded again before it is touched. Do not use the load as a ground contact. After air delivery and before handling, again ground the load to discharge any accumulated/retained static electricity.

CAUTION

When performing external air transport by CH–54 helicopter, a large metal clevis will be used to attach the load to the cargo hook as a nylon sling ring will tend to adhere to the hook thereby preventing release of the load. However, when performing similar transport by UH–1-series or CH–47 helicopter, a nylon sling ring will be used in lieu of a metal clevis to prevent damage to the cargo hook.

NOTE

Each nylon and chain sling leg is constructed of a 15-foot nylon web sling with a metal grab link on its lower end. The grab link is approximately 10 inches long and is equipped with a spring-loaded keeper. Attached to the lower or small end of the grab link is a hammer lock which connects the chain leg to the grab link. The chain leg is approximately 6 feet long and has 64 links. The link at the free end is referred to as link number 1.

NOTE

The following procedures, *a* and *b*, describe the preparation and rigging of the Honest John warhead section in the M480 shipping and storage container. Preparation and rigging of the XM480E1 container are identical except that the lifting fixtures on the M480 container are bars; whereas, in most cases, the lifting fixtures on the XM480E1 container are rings.

a. Transport of M480 container (configuration I), using air delivery cargo slings.

(1) *Materials.*

(*a*) Sling legs: twelve 8-foot, three-loop cargo slings (NSN 1670–00–753–3630) (each has rated capacity of 10,000 pounds).

(*b*) Sling ring: one 3-foot, three-loop cargo sling (NSN 1670–00–753–3788) (has rated capacity of 10,000 pounds), with one link assembly, Type–IV (NSN 1670–00–783–5988).

(*c*) Tiedown device: two CGU–1/B tiedowns (NSN 1670–00–725–1437) (each has rated capacity of 5,000 pounds).

(*d*) Tape: 2-inch pressure sensitive (NSN 7510–00–266–5016), or suitable substitute.

(*e*) Cushioning material: cellulosic, longitudinally compressed (NSN 8135–00–664–6958), or suitable substitute.

(2) *Preparation and rigging.*

(*a*) Insure that all bolts and latches of container are tight and that skids are serviceable. Check lift bars for serviceability. Four men can prepare and rig the container for external transport in approximately 10 minutes.

(*b*) Secure container top to container base using two CGU-1/B tiedown devices (or similar)

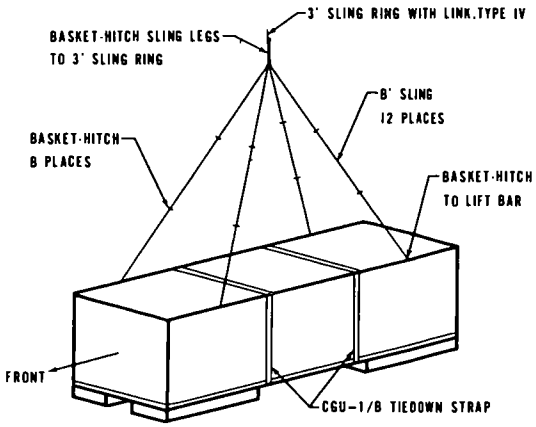


Figure 18. Rigging diagram for M480 container, with Honest John warhead section.

as shown in figure 18. Roll and tape excess strap.

(*c*) Pad and tape container lift bars, and basket-hitch (fig 19) one 8-foot sling to each lift bar. Complete rigging each sling leg as shown in figure 18.

(*d*) Twist each sling leg one turn for each 3 feet of sling.

(*e*) Combine the free ends of the sling legs to form a single loop, and attach this loop to the 3-foot sling. Connect free ends of the 3-foot sling with the link assembly, and safety tie the assembly to prevent accidental release. The 3-foot sling forms the apex for attachment to the helicopter cargo hook.

(*f*) Cluster and tape sling legs (breakaway technique) to prevent fouling during lift-off.

(3) *Derigging.* Four men can derig the container in approximately 5 minutes.

b. Transport of M480 container (configuration I), using sling, cargo, nylon and chain, multiple-leg.

(1) *Materials.*

(*a*) Sling: one 23-foot, nylon and chain, four-leg sling (NSN 1670–00–902–3080) (has rated capacity of 15,000 pounds).

(*b*) Tiedown device: two CGU-1/B tiedowns (NSN 1670–00–725–1437) (each has rated capacity of 5,000 pounds).

(*c*) Tape: 2-inch pressure sensitive (NSN 7510–00–266–5016), or suitable substitute.

(*d*) Cushioning material: cellulosic, longitudinally compressed (NSN 8135–00–664–6958), or suitable substitute.

(2) *Preparation and rigging.*

(*a*) Observe guidance in *a*(2)(*a*) and (*b*) above.

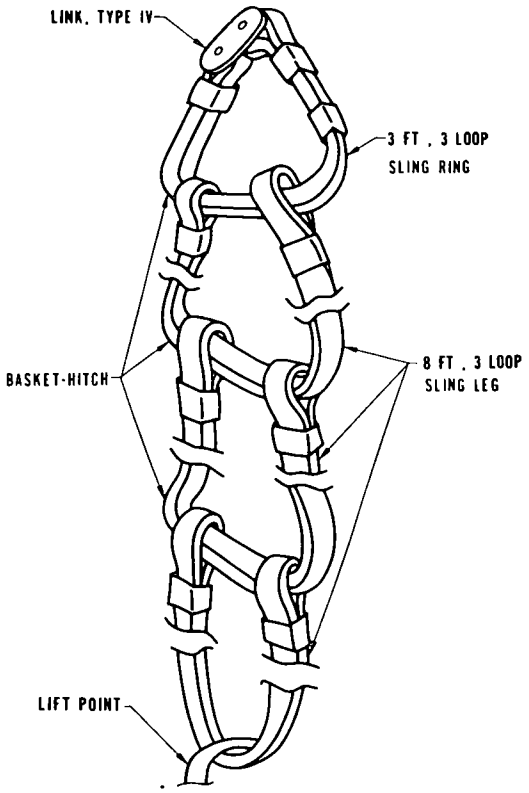


Figure 19. Formation of basket-hitch.

(*b*) Pass one sling chain leg through each container lift bar as shown in figure 18.

(*c*) Form a hitch around each lift bar by passing the chain through the upper part of the grab link that attaches the chain to the nylon sling. Adjust chain length by forcing the selected link past the spring keeper into the lower part of the grab link to complete hitch. The spring keeper prevents the chain from sliding out of the grab link until the keeper is manually depressed and the chain is removed.

(*d*) The 12-inch ring of the sling forms the apex for attachment to the helicopter cargo hook.

(*e*) Observe guidance in *a*(2)(*f*) above.

(3) *Derigging.* Depress spring-loaded keeper on grab link, and remove chain leg from link and from each container lift bar. Four men can derig the container in approximately 5 minutes.

c. Transport of M480 container base (configuration II), using air delivery cargo slings.

(1) *Materials.*

(*a*) Sling legs: twelve 8-foot, three-loop cargo slings (NSN 1670–00–753–3630) (each has rated capacity of 10,000 pounds).

(*b*) Sling ring: one 3-foot, three-loop cargo sling (NSN 1670–00–753–3788) (has rated capacity of 10,000 pounds), with one link assembly, Type–IV (NSN 1670–00–783–5988).

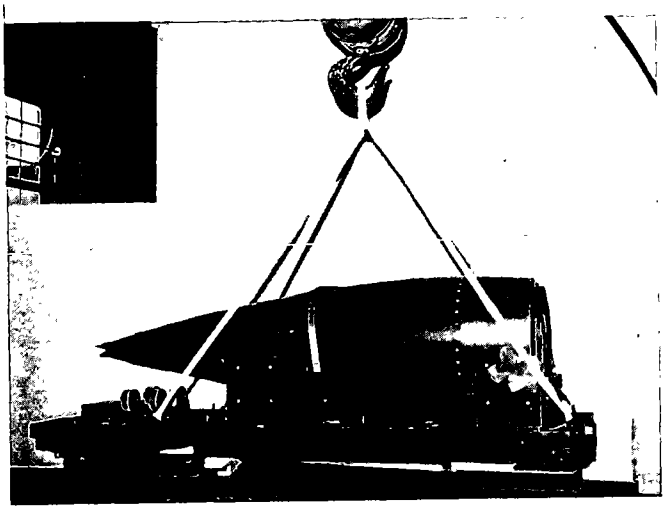


Figure 20. M480 container base, with Honest John warhead section. Sling legs shown are part of the obsolescent universal cargo sling set.

(*c*) Tape: 2-inch pressure sensitive (NSN 7510–00–266–5016), or suitable substitute.

(*d*) Cushioning material: cellulosic, longitudinally compressed (NSN 8135–00–664–6958), or suitable substitute.

(2) *Preparation and rigging.*

(*a*) Insure that warhead section tiedown strap is secured, that warhead nose cone cover (locally fabricated) is installed, and that all bolts are tight. Check lift points for serviceability. Figure 20 shows the lift points used for external transport. Four men can prepare and rig the container base for external transport in approximately 10 minutes.

(*b*) Pad and tape the quick-coupler latch on top of tiedown strap to prevent fouling or abrasion of slings.

(*c*) Pad and tape container base lift fixtures, and basket hitch (fig 19) one 8-foot sling to each lift fixture. Complete rigging each sling leg as shown in figure 18.

(*d*) Pad and tape areas of contact between slings and warhead section to prevent fouling or abrasion of slings.

(*e*) Twist each sling leg one turn for each 3 feet of sling.

(*f*) Combine the free ends of the sling legs to form a single loop, and attach this loop to the 3-foot sling. Connect free ends of the 3-foot sling with the link assembly, and safety tie the assembly to prevent accidental release. The 3-foot sling forms the apex for attachment to the helicopter cargo hook.

(*g*) Cluster and tape sling legs (breakaway technique) to prevent fouling during lift-off.

(3) *Derigging.* Four men can derig the container base in approximately 5 minutes.

d. Transport of M480 container base (configuration II), using sling, nylon and chain, multiple-leg.

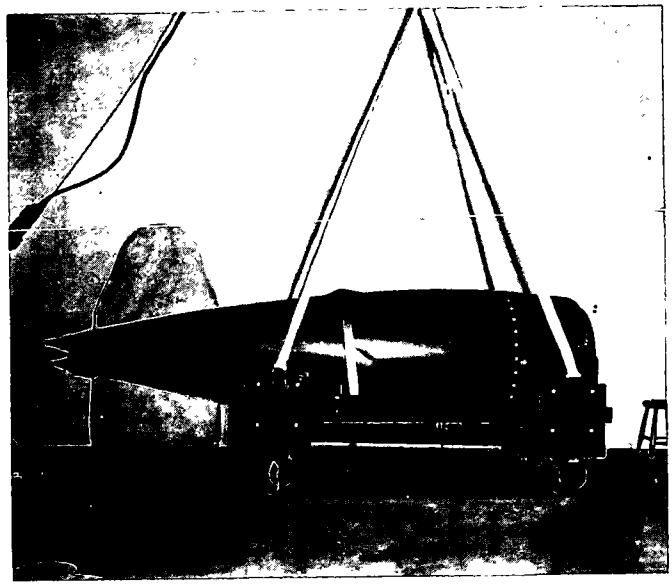


Figure 21. Caster-mounted dolly with Honest John warhead section. Sling legs shown are part of the obsolescent universal cargo sling set.

(1) *Materials.*

(*a*) Sling: one 23-foot, nylon and chain, four-leg sling (NSN 1670–00–902–3080) (has rated capacity of 15,000 pounds).

(*b*) Tape: 2-inch pressure sensitive (NSN 7510–00–266–5016), or suitable substitute.

(*c*) Cushioning material: cellulosic, longitudinally compressed (NSN 8135–00–664–6958), or suitable substitute.

(2) *Preparing and rigging.*

(*a*) Observe guidance in *c*(2) (*a*) and (*b*) above.

(*b*) Pass one sling chain leg through each container base lift fixture as shown in figure 20.

(*c*) Form a hitch around each lift fixture by passing the chain through the upper part of the grab link that attaches the chain to the nylon sling. Adjust chain length by forcing the selected link past the spring keeper into the lower part of the grab link to complete hitch. The spring keeper prevents the chain from sliding out of the grab link until the keeper is manually depressed and the chain is removed.

(*d*) The 12-inch ring of the sling forms the apex for attachment to the helicopter cargo hook.

(*e*) Observe guidance in *c*(2) (*g*) above.

(3) *Derigging.* Depress spring-loaded keeper on grab link, and remove chain leg from link and from each container base lift fixture. Four men can derig the container base in approximately 5 minutes.

e. Transport of caster-mounted dolly (configuration III), using air delivery cargo slings.

(1) *Materials.*

(*a*) Sling legs: twelve 8-foot, three-loop cargo slings (NSN 1670–00–753–3630) (each has rated capacity of 10,000 pounds).

(*b*) Sling ring: one 3-foot, three-loop cargo sling NSN 1670–00–753–3788) (has rated capacity of 10,000 pounds), with one link assembly, Type–IV (NSN 1670–00–783–5988).

(*c*) Tape: 2-inch pressure sensitive (NSN 7510–00–266–5016), or suitable substitute.

(*d*) Cushioning material: cellulosic, longitudinally compressed (NSN 8135–00–664–6958), or suitable substitute.

(2) *Preparation and rigging.*

(*a*) Insure that warhead section tiedown strap is secured, that warhead nose cone cover (locally fabricated) is installed, and that all bolts are tight. Check lift points for serviceability. Figure 21 shows the lift points used for external transport. Four men can prepare and rig the dolly for external transport in approximately 10 minutes.

(*b*) Pad and tape the quick-coupler latch on top of tiedown strap to prevent fouling or abrasion of slings.

(*c*) Pad and tape caster-mounted dolly lift points, and basket hitch (figure 19) one 8-foot sling to each lift point. Complete rigging each sling leg as shown in figure 18.

(*d*) Pad and tape areas of contact between slings and warhead section to prevent fouling or abrasion of slings.

(*e*) Twist each sling leg one turn for each 3 feet of sling.

(*f*) Combine the free ends of the sling legs to form a single loop, and attach this loop to the 3-foot sling. Connect free ends of the 3-foot sling with the link assembly, and safety tie the assembly to prevent accidental release. The 3-foot sling forms the apex for attachment to the helicopter cargo hook.

(*g*) Cluster and tape sling legs (breakaway technique) to prevent fouling during lift-off.

(*h*) Set the dolly wheels so they may rotate freely.

(3) *Derigging.* Four men can derig the dolly in approximately 5 minutes.

f. Transport of caster-mounted dolly (configuration III), using sling, nylon and chain, multiple-leg.

(1) *Materials.*

(*a*) Sling: one 23-foot, nylon and chain, four-leg sling (NSN 1670–00–902–3080) (has rated capacity of 15,000 pounds).

(*b*) Tape: two-inch pressure sensitive (NSN 7510–00–266–5016), or suitable substitute.

(*c*) Cushioning material: Cellulosic, longitudinally compressed (NSN 8135–00–664–6958), or suitable substitute.

(2) *Preparing and rigging.*

(*a*) Observe guidance in *e*(2) (*a*) and (*b*).

(*b*) Pass one sling chain leg through each caster-mounted dolly lift point as shown in figure 21.

(*c*) Form a hitch around each lift point by passing the chain through the upper part of the grab link that attaches the chain to the nylon sling. Adjust chain length by forcing the selected link past the spring keeper into the lower part of the grab link to complete hitch. The spring keeper prevents the chain from sliding out of the grab link until the keeper is manually depressed and the chain is removed.

(*d*) The 12-inch ring of the sling forms the apex for attachment to the helicopter cargo hook.

(*e*) Observe guidance in (*e*) (2) (*g*) through (*h*) above.

(3) *Derigging.* Depress spring-loaded keeper on grab link, and remove chain leg from link and from each caster-mounted dolly lift point. Four men can derig the dolly in approximately 5 minutes.

APPENDIX A

REFERENCES

1. Army Regulations (AR)

10–16	US Army Nuclear and Chemical Surety Group
40–14	Control and Recording Procedures: Occupational Exposure to Ionizing Radiation
50–5	Nuclear Surety.
(C) 50–104	Safety Rules for the Operation of the Honest John Nuclear Weapon System (U)
55–203	Movement of Nuclear Weapons, Nuclear Components, and Related Classified Nonnuclear Materiel
95–27	Operational Procedures for Aircraft Carrying Dangerous Materials as Cargo
360–5	General Policies.
385–40	Accident Reporting and Records
(FOUO) 700–65	Nuclear Weapons and Nuclear Weapons Materiel
740–1	Storage and Supply Activity Operations

2. Field Manuals (FM)

1–100	Army Aviation Utilization

3. Technical Bulletins (TB)

(SRD) 9–380–1	Security Classification of Nuclear Items (U)
385–2	Nuclear Weapons Firefighting Procedures

4. Technical Manuals (TM)

5–315	Fire Fighting and Rescue Procedures in Theaters of Operations
9–1100–200–10	Operator's Manual: Honest John Atomic Warheads Sections
9–1100–200–20	Organizational Maintenance: M27, M47, and M48 Atomic Warhead Sections; M72E1 Training Atomic Warhead Section
9–1300–206	Ammunition and Explosives Standards
38–250	Packaging and Handling of Dangerous Materials for Transportation by Military Aircraft
(CRD)39–0–1A	Numerical Index to Joint Atomic Weapons Publications (Including Related Publications) (Army Supplement) (U)
(SRD)39–20–7	Nuclear Safety Criteria (U)
(CRD)39–20–11	General Firefighting Guidance for Nuclear Weapons (U)
39–45–51	Transportation of Nuclear Weapons Materiel
(SRD)39–45–51A	Transportation of Nuclear Weapons Materiel (Supplement) Shipping and Identification Data for Stockpile Major Assemblies (U)
39–45–51C	Transportation of Nuclear Weapons Materiel (Supplement): DOD Criteria, Courier Responsibilities, Military Shipment, and Vehicle Loading/ Tiedown Procedures
(CRD)39–50–8	Emergency Destruction of Nuclear Weapons (U)
55–450–8	Air Transport of Supplies and Equipment: External-Transport Procedures
55–450–11	Air Transport of Supplies and Equipment: Helicopter External Loads Rigged With Air Delivery Equipment
55–450–12	Air Transport of Supplies and Equipment: Helicopter External Loads for Sling, Nylon and Chain, Multiple Leg

55–450–15	Air Movement of Troops and Equipment (Nontactical)
55–450–18	Air Transport of Supplies and Equipment: Internal and External Loads, CH–47 Helicopter
55–450–19	Air Transport of Supplies and Equipment: Helicopter External Lift Rigging Materiel, Techniques and Procedures
55–1520–209–10	Operator's Manual: Army Model, CH–47A Helicopter
55–1520–210–10	Operator's Manual: Army Model, UH–1D/H Helicopter
55–1520–217–10–1	Operator's Manual: Army Model CH–54A Helicopters
55–1520–217–10–2	Operator's Manual: Army Model CH–54B Helicopters
55–1520–219–10	Operator's Manual: Army Model UH–1B Helicopter
55–1520–220–10	Operator's Manual: Army Model UH–1C/M Helicopter
55–1520–227–10	Operator's Manual: Army Model CH–47B and CH–47C Helicopters

APPENDIX B

CONVERSION TABLES

1. Common Metric Abbreviations

m = meter	kg = kilogram
dm = decimeter	km = kilometer
cm = centimeter	t = metric ton
mm = millimeter	

2. Linear Measure

1 mi = 1,609.35 m	1 km = 0.6214 mi
1 yd = 0.9144 m	1 m = 1.0936 yd
1 ft = 0.3048 m	1 m = 3.2808 ft
1 in = 0.0254 m	1 m = 39.37 in
1 m = 10 dm = 100 cm = 1000 mm	

3. Surface Measure

1 sq yd = 0.8361 sq m	1 sq m = 1.196 sq yd
1 sq ft = 0.0929 sq m	1 sq m = 10.764 sq ft
1 sq in = 0.00065 sq m	1 sq m = 1,550 sq in

4. Cubic Measure

1 MTON = 1.1328 cu m	1 cu m = 0.883 MTON
1 cu yd = 0.76455 cu m	1 cu m = 1.31 cu yd
1 cu ft = 0.02832 cu m	1 cu m = 35.31 cu ft
1 cu in = 0.000016 cu m	1 cu m = 61,023 cu in

5. Weight

1 LTON = 1,016.05 kg	1 lb = 0.45359 kg
1 t = 1,000 kg	1 t = 2,204.63 lb
1 STON = 907.18 kg	1 kg = 2.2046 lb

6. Simplified Conversion Factors

The following simplified conversion factors are accurate to within 2 percent for quick computations:

a. Inches to centimeters—Multiply inches by 10 and divide by 4.
b. Yards to meters—Multiply yards by 9 and divide by 10.
c. Miles to kilometers—Multiply miles by 8 and divide by 5.
d. Pounds to kilograms—Multiply pounds by 5 and divide by 11.

Paragraph 7–37, FM 55–15 and paragraph 2–15, TM 55–450–15 contain additional detailed conversion factors.

7. Conversions for lumber, Wire Rope, or Wire.

The following conversions are provided for guidance when procuring lumber, wire rope, or wire in areas that use the metric system. Lumber sizes are rounded off to nearest ½ cm.

a. Lumber.

2-in x 4-in. x desired length = 5-cm x 10-cm x desired length
1-in x 6-in x desired length = 2.5-cm x 15-cm x desired length
6-in x 8-in x desired length = 15-cm x 20-cm x desired length

1-in x 12-in x desired length = 2.5-cm x 30-cm x desired length
(length normally expressed in ft or m).

b. Wire rope.

⅜-in diam = 9.5-mm diam
½-in diam = 12.7-mm diam
⅝-in diam = 15.8-mm diam
¾-in diam = 19.0-mm diam
⅞-in diam = 19.0-mm diam
⅞-in diam = 22.2-mm diam
1-in diam = 25.4-mm diam
1¼-in diam = 31.7-mm diam
1½-in diam = 38.1-mm diam

Round off to next higher whole mm of available wire rope sizes.

c. Wire. No. 8 gauge annealed (11/64-in. diam) = 4.37-mm diam. Round off as in *b* above.

8. Remarks

It should be noted that standard abbreviations used on drawings, specifications, and technical documents, in some instances, are not in agreement with AR 310–50. Such abbreviations are governed by MIL–STD 12.

By Order of the Secretary of the Army:

FRED C. WEYAND
General, United States Army
Chief of Staff

Official:

PAUL T. SMITH
Major General, United States Army
The Adjutant General

Distribution:

Active Army, ARNG, USAR: To be distributed in accordance with DA Form 12–31, Section 1, Operator requirements for CH–47B/C, CH–54A; CH–54B; UH–1B, UH–1C/M, UH–1D/H (Qty rqr block no. 161, 171, 181, 241, 251, 261); DA Form 12–34B, requirements for Air Transport Procedures; Nuclear Warheads and Projectiles (Qty rqr block no. 155) and DA Form 12–35, Section 111 requirements for Honest John (Qty. block no. 41).

☆U.S. GOVERNMENT PRINTING OFFICE: 1975—603–770/5029

3000021247

DEPARTMENT OF THE ARMY
US ARMY AG PUBLICATIONS CENTER
2800 EASTERN BOULEVARD
BALTIMORE MARYLAND 21220

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

POSTAGE AND FEES PAID
DEPARTMENT OF THE ARMY
DOD 314

SPECIAL FOURTH CLASS BOOK
RATE